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THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

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PART I. ORIGINAL COMMUNICATIONS.

ART. I.—*South African Colonies as a Home for the Consumptive.*
By J. ALEXANDER ROSS, M.D.

MANY have been the climates suggested for the benefit of the phthisical invalid—so many, indeed, that a writer cynically says the patient is advised to live any place but where his own home is. I have myself heard it remarked that the physician sends the invalid abroad to die when he has failed to give him relief at home. My experience of the South African climate, and intercourse with invalids sent thither, convinces me that a well-selected climate will often effect a recovery when other means have failed; that change of climate is one of the most valuable remedial agents at the physician's command, but that the same climate is not suitable to all constitutions.

I know the difficulty in persuading those who *have* ample means to send a loved member of the family from home; they wait and hope; the few symptoms, with slightly-ailing health, which to the experienced physician are unerringly the harbingers of death if the patient remain at home, have no such dread warning for the friends, and for the invalid least of all, for he proverbially is hopeful—aye, even to the last hour of his life; the disease progresses so insidiously that life and strength ebb away almost unnoticed by even those anxious ones around; at last the symptoms become graver as the last stage of the disease sets in; then, perhaps, the friends are

ready to adopt any course, and the physician, knowing the inevitable result if the patient remain at home, gives a reluctant consent, or, it may be, even advice, to cling to the last frail thread of hope, by resorting to a favourable clime. But, alas! the advice was not adopted in time. With the middle classes—those who must work for their living—the case is different; they cannot go whither they will; yet I hope to show that even they, with but a moderate capital, can find a country where they can labour with that cheerfulness which health gives by changing a life of sickness, anxiety, and sorrow, into one of animation and pleasure.

I have carefully investigated the valuable statistics recorded year by year in the blue books of the Army Medical Department. The value of these statistics for my purpose is, I think, evident. Soldiers' duties are much the same, and they lead a very similar kind of life, wherever stationed; they remain sufficiently long, too, on foreign service to test the effects of the climate. To render the information from this source reliable, I have not made use of statistics for any one year, but for a long series—viz., ten years (1863–1872 inclusive). It has been asserted that the immunity from phthisis which a certain country may enjoy cannot be accepted as evidence that the country will be beneficial to the actually phthisical—consequently the army statistics would be valueless. But I think it is a reasonable inference that a climate which is not favourable to the development of phthisis will exercise a favourable influence over the disease in the invalid immigrant.

As independent evidence, I can recollect at this moment eleven persons, with whom I had personal intercourse, who were sent from home as phthisics, and who at the time of my visit were supporting themselves by their industry, most of them in good health, and all of them apparently enjoying life. I do not include amongst this number those (and they were many) who told me that they were advised to leave England owing to their having “delicate chests;” they generally had appointments offered to them before going to South Africa. It may be expedient here to state concerning the disease that in his general principles I accept Niemeyer's pathological teaching. Although the case of Mr. W. indicates that even for the *tubercular consumptive* there is hope, yet the soundness of Niemeyer's opinion concerning climatic treatment will be accepted as a common rule. He says:—“If we have come to the conviction that a consumptive patient has tubercles, we ought not to send him to Nice, Cairo, &c., but ought to let him live his last

days among his friends, and die in his own house. This applies, however, only to those cases in which the diagnosis of tubercle is beyond any doubt."^a

A year ago the choice of a clime more suitable for winter residence than our own became necessary. Southern Europe, Northern Africa, the mountain plateau of Peru, Australia and South Africa, each had claims to which due consideration was given. South Africa was chosen for these reasons: the climate is known to be warm, yet invigorating, and very dry; the place is accessible, though distant; there is good and frequent communication by two services of steamers, which in their arrangements leave nothing to be desired, and the country, for the most part, is peopled by an English-speaking population.

A voyage itself plays an important part^b in restoring the health of the invalid, provided a judicious choice is made of the route; but I cannot help thinking that the Australian voyage (as we shall see was the case with the Australian climate) insinuated itself into the good opinion of the public without sufficient reason. During the return voyage round Cape Horn the invalid is exposed to a severe and injurious cold—a damp cold; on the voyage out, too, the weather for a time when south of the Cape (if a very southerly course be taken) is not so genial as the irritable chest requires.^c That the cold of the southern points of the Australian route is hurtful there can be no doubt. Dr. Maclaren, who undertook the voyage for his health, states that it brought on in himself and another invalid attacks of hæmorrhage from the lungs.^d It is right to say that Dr. Maclaren was, nevertheless, restored to health by means of his Australian voyage. Dr. D., who has for several years lived with advantage in South Africa, told me that his illness began with frequent attacks of hæmoptysis; he went on a voyage round the Cape to India, and for the first time after leaving England the hæmorrhage returned when the ship passed in the neighbourhood of ice south of the Cape.

On the voyage to Cape Colony no such dangers present them-

^a Niemeyer's Clinical Lectures on Consumption. New Sydenham Society Edition.

^b Of 251 patients subject to various climatic influences, the greatest benefit was derived by those who resorted to sea voyages. See Dr. C. T. Williams' article in *Med. Chir. Transactions*. Vol. LV.

^c This remark scarcely applies now, for I understand that a fast line of Australian steamers has been organised, that so southerly a course is not taken, and that the home voyage is round the Cape of Good Hope, not Cape Horn.

^d *Medico-Chirurgical Review*. 1871.

selves. If England be left in early winter, summer weather will be experienced throughout the voyage.

I took some pains to ascertain the minds of the sailors on this point, and the opinion was unanimous that "more weather" is experienced on one voyage across the Atlantic than during many voyages to and from South Africa.

To the invalid whose purpose is to travel much on land, a sea voyage is of decided use; body and mind are rested, but not fatigued by total inactivity; the passive exercise caused by the motion of the ship, when one has got accustomed to it, and the passing through pure air produce an appetite proverbial to seafarers, give strength and tone to the system, and fit it for the greater exertion of land travelling.

In December the "Walmer Castle," a comfortable boat and well found, steamed out of the West India Docks with 126 passengers on board. It is said that no time is so opportune for obtaining a handsome subscription from an Englishman as after a faultless dinner. The owners of the Colonial Mail Line evidently have faith in the influence of a good table in promoting *bon-homie*, if we may judge from the excellent *cuisine* provided.

Of the passengers some were returning to their African home, longing for their cloudless sky and their clear and bracing air; others were going for the first time, and these were in the minority.

At first the life at sea is not congenial to the tastes of a landsman, but soon—wonderfully soon—we who had seen one another for the first time a few hours before—people of many tastes and many temperaments—became as happy a little world as could be desired. On the captain of a ship much of the well-being and comfort of the passengers depend, and we were fortunate in ours. May his success in seamanship be as uniform in the future as it has been in the past.

The first day or two were not enjoyed; we were quiet and wore a melancholy look, but none of us would acknowledge the sea as the cause. We quickly got over this; meetings were held, concerts and dances arranged. The "fourth estate," too, rose into being, and there was a weekly issue; it had not the "largest circulation in the world"—that being the especial claim of a contemporary—and it did not issue from the press, but from the hands of amanuenses; but it gave us amusement, and it occupied our time.

After a five days' run from England we anchored off Madeira; five days to a landsman without seeing land—how gloomy the

thought! The reader will not learn with surprise that on that fifth morning we were up with the lark. Little Portuguese boys came alongside in their boats exhibiting their feats of diving; but, the first novelty over, the land had our undivided attention, and we hurried off to Funchal. Reed's hotel furnished an excellent breakfast, and then we viewed the "lions." Though in winter, it was warm, but to me a disagreeable heat—I felt as if in a vapour-bath; the air felt saturated with moisture. When I again visited the island in the following June, my sensations were the same; the streets are narrow and paved with small round stones, between which the grass grows; indeed vegetation is very luxuriant, owing to the heat and moisture; the houses are high and frequently not in good repair; the cemetery contained the graves of but too many of my fellow-countrymen, who, at Madeira,* sought in vain a restoration to health, which I am constrained to think some of them might have gained had they resorted to the highlands of Bloemfontein or Winburg, in the Orange Free State, or to Colesberg, Cradock, or Aliwal North, in the Cape Colony.

I feel persuaded that our knowledge of the suitability of different climates to the different forms of phthisis occurring in various constitutions has yet to undergo as great a progressive change as has, during recent years, our skill in distinguishing the several diseases grouped under the term consumption.

From Madeira to our destination the voyage was a delightful one; the weather for a few days was uncomfortably close—we preferred the deck to our cabin, and our appetites were not so keen; but a steamer going twelve miles an hour produces of itself a refreshing breeze.

* Without wishing or feeling competent to enter into the merits of Madeira, I may quote the following from the *Lancet* concerning the 20 consumptives who were sent from the Brompton Hospital to Madeira in the winter of 1865-66:—"However favourable the views may have been respecting the influence of the climate of Madeira in averting or curing phthisis, enough to inspire caution has been shown by the Report of the Medical Committee of the Brompton Hospital respecting the twenty patients sent out by that Charity in November last, to winter in that island. The following is, briefly, the result:—Five of the invalids left England in the first stage of the disease, four in the second, and eleven in the third. As regards their general health, two out of the twenty returned much improved, seven were slightly improved, four were not so well, and one died suddenly at Madeira, from rupture of a blood-vessel (in April), though he had done well up to a certain point. In two cases the chest symptoms improved; in twelve, they remained stationary; and in five, they appeared to have advanced. Four patients increased in weight during their absence, thirteen lost weight, and two experienced no change in this respect."—*Lancet*, August 4th, 1866.

While in the "doldrums," as sailors call the equatorial calms, one thing much impressed me—the highest reading of the thermometer in the shade was only 86° F., and the temperature of the ocean was 80°, yet we all had a feeling of oppression and languor; we did not complain so much of the heat as of the depression produced, and it was the moisture combined with the heat which produced this depression; the air was surcharged with moisture—so saturated that the clothes in the cabin became very damp; we were then in the current running out from the Guinea Gulf; we could see the currents, as it were, rivers in the ocean, for the sea itself seemed too languid to move. From 90° to 100° F. is a common maximum temperature of a Cape summer, but there is no depression with it.

As we neared Capetown, how we eagerly looked for the first glimpse of land, the colonists for their home, we strangers for the country of which we had heard so much in praise during the voyage. At last, land was sighted—a low-lying shore, very white, and shining under the rays of an African sun; then Table Mountain came in view, and soon we could see the town creeping from the shore up the base of the mountain. What a picture! The dark foliage of the trees, the brightness of the houses, and that great dark mountain, cloud-capped, in the back-ground—all contrasted to advantage.

In a short time our fine ship was safe in dock, and then commenced a busy time for the cabs, but the Capetown "cabby" often has this good fortune now, and well he deserves it; his cab is in good trim, and his little high-bred horse is in good condition—he is generally a Malay.

I hailed a cab and went in search of comfortable quarters where to abide during my short sojourn; the "Gardens" were recommended, and thither we drove. But the houses there were in too great request, and were fully occupied; so I returned to town with no little regret, leaving a charming place behind, and aptly named too; vines grow in front and around the houses, passion flowers and other climbers add beauty to the immediate scene, while the dark green foliage of the groves in the back-ground gives the whole an air of grandeur; each house has a "stoep" or verandah, which is often more used than the house itself. The town has an un-English appearance, but the houses are well built, and the streets wide. I put up at the "Royal," and was well pleased with its arrangements; there I got some very palatable "white Constantia," but I cannot say as much for the sherries. Constantia has wine-growers of repute, but they get too good prices at home, so they do not export largely; Paarl,

also, will produce good wine, but some more care in selecting the fruit is required.

While at Capetown I visited the Somerset Hospital, a building creditable to the colony, and there learned that phthisis is prevalent among the natives at Capetown, and this prevalence is attributed to their insanitary habitations, the deprivation of their customary food—milk—and to intemperance. That intemperance *per se* can produce consumption is highly improbable. An authority remarks concerning this:—"It would appear that publicans, who, unquestionably, as a class, largely consume their own vendibles, are, *cæteris paribus*, less destroyed by phthisis than persons in various other walks of life."^a The injury to mankind, through the ruin of families, the loss of life, and the destitution of the young and innocent, all from the effects of drink, is sufficiently alarming to make us exert all our influence against so baneful an enemy; but the ascribing hastily, and without sufficient data, causes for effects, can but indicate a prejudiced mind, consequently an incapacity for weighing evidence, and thus throw discredit on scientific opinion. I shall again revert to these causes.

Capetown is not a desirable place for the consumptive; it is subject to dust-storms, so violent as to hurl pebbles and small stones through the air; but Wynberg and Rondebosch are favourite resorts, both of which I visited; they are charmingly situated, the former in the heart of a pine forest. The Capetown storms are local, and are rarely felt at Wynberg, or even less distant suburbs.

On the third day we steamed out of Capetown Dock for Algoa Bay, where we arrived on a Saturday evening. Much as I was pleased with the first view of Capetown, I was disappointed with Port Elizabeth (the town built on Algoa Bay); bare sand-hills then were to be seen, with houses stretching for two miles along the shore, and others of good proportions on the hill, which rises some hundreds of feet above the sea; not a tree to be seen; the country had suffered severely from drought, the grass was scorched, and the hills bare; very different was the state of the place when, some months afterwards, I returned; there had been rain, the grass was green, and the place had lost its desert appearance. But Port Elizabeth has no claims to beauty—its situation precludes this—but it has more substantial claims to consideration. It is a rising seaport, its trade is healthy and flourishing, and its busy streets,

^a Walshe on Diseases of the Lungs.

crowded with waggons and their teams of oxen, give it an air of importance which no other town in South Africa has; its buildings, too, are solid, massive, and of architectural merits; its magnificent Town Hall and Library, Churches, and the Grey Institute, deserve especial mention, but there is no workhouse, for a man need not be destitute except during illness, and then he is well taken care of at the Provincial Infirmary. This Infirmary is a well-erected building, one storey high, arranged round a quadrangle; its greatest defect is its totally insufficient nursing staff. This is not owing to apathy on the part of the governors or medical staff, but the services of women-nurses cannot be obtained. Here, too, I saw cases of phthisis, chiefly amongst the coloured race. Coast towns have got the reputation of being unfavourable to the phthisical; how far they may be libelled, I cannot adduce evidence to prove. I have seen some people who were obliged to leave England enjoy life in them.

Uitenhage, twenty miles distant, is situated in a fertile and well-watered district; it supplies Port Elizabeth with fruit and vegetables. There the English oak, the walnut, and the almond tree, grow side by side, and to perfection. I have never seen so large acorns in England as on those oaks.

After a fortnight's sojourn at Port Elizabeth I secured a seat for Grahamstown in Cobb's coach. These conveyances deserve a passing notice; they were pioneers to railways in America, Australia, and New Zealand, and are now in South Africa, for Cape Colony has now many railways in progress, and for years has had two in full work. Cobb's coaches are built of hickory, and their construction is marvellously light for their usage; they have no springs, but are placed on broad leather bands, stretched tightly between two supports on the frame; they are drawn by six good horses, and eight miles an hour is the average speed. I do not say they are comfortable—far from it—but what vehicle could be comfortable on such roads? They are called roads, but are, as yet, for the most part, beaten tracks made by waggons, and when heavy rains cut deep trenches in them, the coach goes "across country," and this "'cross-country" travelling is generally the smoothest. The middle seat of the coach is the best, for the motion is that of a ship pitching. They are inveterate enemies to tall hats, as they now and then lift the passenger from his seat and rap his head against the roof. I travelled 500 miles in one in

* Macadam-roads are being made throughout the colony.

six days, rising each morning at four o'clock, and ending the journey about eight o'clock each evening, and I thoroughly enjoyed it; ladies also did the same; but the very weak invalid should not choose this mode of travelling. A tented ox-waggon is preferable; in it he can travel leisurely along, and, if he be able for it, springbuck, blesbuck, and other game, will afford him ample sport.

At half-past four in the morning we were rattling along at a good speed, the air delightfully exhilarating. At several roadside inns we halted, at which we got fresh horses and good refreshments. At the Nazaar, one of the favourite inns on the road, we got an excellent dinner, well cooked and well served.

At six in the evening Grahamstown streets re-echoed the rattle of our coach and the blasts of the horn; we were just in time for another dinner, and were ready for it too.

Grahamstown is built on hills, and is 1,700 feet above the sea, yet it lies in a basin surrounded by higher hills. It has wide streets and good houses, and possesses public gardens of great merit; it has also a Natural History Museum and a public library.

I made special inquiries as to the prevalence of lung diseases; and here, too, I found, as I was prepared to find everywhere, that consumption is certainly not unknown, that Europeans die of consumption originated in Europe, and that Europeans occasionally develop phthisical symptoms even after many years' residence; but then the latter instances are not of frequent occurrence as in England. At home consumptive patients are always on the physician's visiting list; here the physician would refer to a phthisic he had seen months, or it might be a few years, before, and refer to it as a thing of rare occurrence. I speak now of the white residents of the country, and do not include invalid visitors. The coloured population does not enjoy this immunity, and, in consequence, the mortality from this cause in the Albany Hospital at Grahamstown is rather high. These hospitals are, in some respects, the representatives of our union infirmaries. There are few poor in the colony, except when sickness comes, and then the hospital is the place of refuge, so that the statistics of deaths from chronic diseases cannot be compared with those of British hospitals other than the union infirmaries. In the British hospitals those suffering from chronic disorders are not retained, whereas in the Cape hospitals the incurable and friendless invalids remain during life.

Fortunate it is for some of our distant colonies that their genial climates can give a home, a sphere of usefulness, and the inestimable blessing of health, to those who would have taken prominent places amongst their *confrères* at home, had our trying climate permitted it. Some such valuable lives I found, and notably one at Grahamstown, who, driven from a life of good service to his fellow-men in England, resorted to other countries, but nowhere derived benefit until his South African home restored him to health, and gave the benefit of his operative skill and sound judgment to a community that fully appreciates them. Other examples of remarkable recoveries from phthisis I witnessed at Grahamstown—some of them, I believe, true recoveries, not mere abeyance of the disease; others had good health while they remained in the country, but could not live in England. An example of the latter class I saw in a gentleman who, I learned, had tried many climates; his means allowing him to travel whither he willed, but nowhere finding relief, he resorted to South Africa. Bloemfontein even then (twelve years ago) had a high reputation, and there he went—his only means of conveyance a bullock-waggon, travelling twenty miles a day, and sleeping in the waggon at night. Judging from our own climate, one would think that a journey such as this, extending over a month, not likely to benefit a consumptive, yet experience teaches that it does. Bloemfontein was reached, and the invalid was so weak for a time that it was necessary to carry him from his bed to a couch. Improvement came by degrees, and after some months he went to a farm-house in the neighbourhood, and became fully restored to health. After several years he went back to England, but his old symptoms returning, he sought again his African home. One seeing him now could with difficulty believe he was ever a consumptive. He resides at Grahamstown; is a hard worker from choice, and his arduous duties closely confine him.

But the reader must not look upon me as a special pleader for South Africa; nor should it be thought that a voyage to the Cape, and a short sojourn in the country, is an infallible remedy for phthisis. It was pitiable to meet invalids sent out at a time when they required the tender nursing and comforts of home, and who had spent those precious early months or years of the disease in wintering at some southern English watering-place, and returning to their homes in summer, when a more radical change was necessary; yet even some of these recovered.

Invalids are in error in remaining too short a time to produce

good results; the evidence of most of those who have recovered goes to show that improvement is only to be looked for after many months. One gentleman at Bloemfontein, whose recovery is almost miraculous, told me that he experienced little improvement for the first two years, but then his convalescence gradually and steadily progressed.^a

From an early period the Cape physicians have placed their faith in two remedial measures—the one, living continually in the open air; the other, a residence on high elevations. The results must have justified it, for to-day that faith is unshaken.

In conversation with a fellow-traveller one day, he said, “Do I look like one in decline?” I certainly thought not, and told him so. “Well,” said he, “twenty years ago Dr. A. told my friends that I was in consumption, and I did feel very weak, and had a bad cough. I was sent off with a *kurveyor* who was going up country, and that journey made a man of me. It was a rough life; the food and cooking were not very good, and there were no comfortable inns then every ten or fifteen miles. We always slept on the ground under the waggon; still I got strong, and the life suited me so well that I took to transport riding, and have stuck to it ever since.”^b

In the Albany Hospital (Grahamstown), through the courtesy of Dr. Williamson, I saw a man, aged forty-four, in whom phthisis had become developed during his residence in the colony. He was the only white phthisic in the hospital, and he had lived too freely, and had taken very indifferent care of himself. I examined him; there was evidence of a large cavity in the upper part of the left lung; the right lung contained deposits. He had been in the colony for twenty-five years. Ten years ago the disease first appeared, but he rallied and continued in fair health until a few months since. At the date of my examination his good fleshy condition was remarkable, yet this and his appetite were failing. His mother died in England, at the age of forty-five, from “asthma” (probably phthisis).

^a Since writing the above, I have got tidings of another phthisical patient who, in 1873, was sent by a London physician of repute to South Africa. I saw him at Bloemfontein, and from his state then I did not expect so soon to learn such encouraging news as the following, dated June, 1875:—“My brother is much better—in fact, almost well again; but he is still in Bloemfontein, as the doctor out there considered that it would be better for him to remain until next spring, to give him every chance of a permanent cure.”

^b I do not instance this as an undoubted case of phthisis, as I made no inquiries into it.

During my stay at Grahamstown I had an opportunity of visiting an ostrich farm. Some miles from the town there lives a gentleman whose hospitality it was my good fortune to enjoy. Nowhere, I believe, in the colony could I have seen an ostrich farm in better working order. Mr. D. has made a special study of the subject, and his practical intelligence and perseverance have crowned his efforts with a full share of success.

To begin at the beginning, my host conducted me to a room in which I found many eggs in various stages of incubation; but there were no birds to be seen, for Mr. D., finding that the plumage of the birds deteriorated so much during incubation, devised a suitable artificial mother; each such incubator can hatch sixty-four eggs at a time. Much experience and attention are required, but these are well repaid by the successful results. Six weeks are required for hatching, and the birds (of which there were over two hundred on the farm) were fully occupied in supplying two incubators. Next we went to see young birds a day or two old; they were in a garden with their nurse, who was a Kaffir boy; they were feeding on lucern. So strong becomes the attachment between the birds and the boy that they are with difficulty weaned from him. At a month old they are taken away and put into another enclosure, but they do not forget their friend so readily, and at the time of our visit the monthlings were crowded close up to the fence, watching the nurse wherever he went. It is made the boy's interest to take good care of his charges, and for sufficient reason—two ostriches sold the other day for £325. The old birds occupy several enclosed runs or paddocks of several hundred acres, the younger ones being nearest the house. To visit these we mounted our horses. Before we had gone far a large green snake crossed our path; he chose an unfortunate time. Having despatched him, we rode on to the ostriches.

I can scarcely say with truth that I enjoyed my first visit. Lady Barker gives to the wekas of New Zealand the credit for being inquisitive, but ostriches, I am sure, will not yield the palm even to a weka; and they have this advantage over the weka to the disadvantage of the object of their attention, that they can minutely examine him even when he is on horseback. I first noticed that they took a particular fancy to a bright buckle on my saddle, and their efforts to peck it off were so forcible that I was meditating how unpleasant it would be were they to get a similar idea into their heads about my more prominent features. When I

chanced to look at my host, and saw a goodly congregation around him, some of those behind paying much attention to his ears, and presently one who could restrain his curiosity no longer tried to appropriate one of them, my host felt it, and so evidently that I was fully convinced it was not pleasant. These farm ostriches are very tame; when not vicious they will suffer themselves to be handled at will, but some, especially the older birds, in pairing season become very savage and dangerous; they can with a kick lay open the side of a horse, but they can only kick an object in front of them. We went to see some of these, and as we neared the enclosure, one, a magnificent male bird, saw us from a distance; he strutted majestically towards us, then squatted on the ground, rolled his head and neck around, roared and ran at us. We looked admiringly on; there was a good fence between. He was ingeniously wiled into an enclosure, and then we found the cause of his fury—a female bird sat hatching in a secluded place. The thought that a bird could be dangerous to man is ridiculous, and the fact is that, armed even with a long stick, a man would be more than a match for the ostrich, but in warding off the danger he would injure or destroy £150 worth of property.

I took leave of my host and hostess with the wish lingering in my mind that my visit could have been prolonged with such genial friends.

Next day I moved onward, taking coach to Fort Beaufort, passing many places of much interest on the way—scenes of the white man's struggles with, and the white man's victories over, the Kaffirs; places where horrible torture had been perpetrated on some settler by the maddened wretches. But I do not mean to enter on this subject.

On the road to Fort Beaufort the eye is frequently indulged with magnificent landscapes, sometimes the scene is gigantic in its grandeur.

A few miles from Grahamstown the Ecce heights are crossed; the "Queen's Road," an admirable piece of engineering, winds through the mountains, ravines lying many hundred feet below, the mountains clad with acacias, aloes, and euphorbias towering above; there is no fence to prevent the unruly horse dashing over the precipice to certain destruction, and the driver of a two-wheeled Cape cart can have but little control over his six horses. Yet accidents rarely occur.

The thought now strikes me as I write, seated near to the fire on

a dreary wet winter's night, that I do not say whether we had a favourable day for our journey; but at the Cape the weather is so constantly fine, people almost forget that there is such a subject. Fort Beaufort is a small settlement, and has passed through troubled times, but happier ones have succeeded, and it is now thriving.

Next morning we were up at four, had coffee, and started. As we wound through that lovely valley of the Kat, how exhilarating was that early morning air, so clear and bright—not a haze to be seen.

We breakfasted at Balfour, after a drive of 24 miles; it lies at the foot of the great Katberg range of mountains, whose heads rise 6,000 feet above. A picturesque little spot is this Balfour; its groves of orange and peach trees attract the eye of the traveller from a distance.

We breakfasted at one of the best kept inns in the colony—so scrupulously clean and so neat in its arrangements. While awaiting breakfast we wandered through the orange grove. There was no drink to be had here; the inn is owned by a Mr. Green, a missionary, and often did I afterwards wish to meet with more such inns. I was much impressed with the thought of how little desire there was for wine here, where there was good food and good cooking; and afterwards, when travelling through a less frequented part of the country, I had many opportunities of observing that wherever we got good food wine was little in request; but where the contrary was the case, a stimulant was resorted to. How often I thought then that here is one secret of the power of the public-house over many a working man—a slovenly, cheerless home, and good food made uneatable by bad cooking; how few workmen's wives know how to cook or how to manage—and with them rests not the blame. Had they opportunities of learning? Did any one try to teach them how to make home comfortable, cheerful, and attractive? Is not here a wide and little-occupied field for doing good? Cookery schools for young girls are required all over the kingdom, and, in most instances, could be made self-supporting.

After breakfast we began to wind our way over that lofty range, the Katberg, and the day was well advanced when we gained the summit. We had six good horses in a two-wheeled cart, and a fresh team was awaiting us half way up. All praise is due to the owners for the care they bestow on those horses. Some danger attends this mountain climbing; there is absolutely no protection. When about

midway up we saw the wreck of a waggon that had gone over the previous day; the bales of wool, its freight, lay in the valley beneath.

Passing through Whittlesea, a place whose name is prominently associated with Kaffir wars, we reached Queenstown in the evening, the last stage of 21 miles being accomplished, in less than two hours.

My sojourn at Queenstown extended over two weeks; it is a new town and a thriving one; I heard that it lies 2,000 feet above the sea, but it is not to be recommended for invalids; it is close and uncomfortable at times; its site is too flat and too much shut in by hills. I shall always have pleasurable recollections of the place, for I experienced much kindness from many of its people.

Drs. Rhind and De Morgan gave me much information. Dr. Rhind spoke highly of some places in the Transvaal Republic, the country of the recent gold discoveries; this State (also called the South African Republic) lies north-east of the Orange Free State, and is, I believe, the highest table-land in South Africa.

My next journey was to Dordrecht, a town built among the Stormeberg Mountains, a range most aptly named, for here thunderstorms are daily events; and here it was I first saw—to me a novel sight—a clear sky, scarce a cloud to be seen, save one, large, massive, and white; it goes sailing along, and you see the lightning play through it in frequent flashes, and you hear the distant thunder, but the lightning seems never to leave the cloud. At Dordrecht, too, thunderstorms, in all their terrific grandeur, can be seen. Massive clouds rise gradually above the horizon—let us say in the north; white and very beautiful they look, higher and higher they rise, and now in the east, too, clouds are peeping up, and after a short time in the west also. By this time (perhaps not two hours from their first appearance) the clouds from the north have got high in the heavens; they come rapidly on, the eastern bank advancing to meet them; suddenly the heavens are darkened; the streams of liquid fire become terribly vivid and lasting, and the thunder crashes with terrific violence; the storms from the east and west break forth, and the lightning streams and the crashing thunder are continuous. It is a time of awful grandeur. At last a deluge of rain comes, and the storm passes over.

Dordrecht should stand well as a consumptive's home were it not for these frequent storms; it lies high, is well watered, and has rich land, and, as a result, good food; but there are better places, and,

therefore, why go there, unless it be to settle down on one of the good farms in the neighbourhood. Throughout the colony the custom prevails of drinking the water as it floods, thick and muddy, down the streams, which a few hours or days before were but dry river-beds; this water had flushed the earth and carried the lighter bodies with it to the nearest rivers; as a result, low forms of vegetable and animal life abound in it. And, as a further result, men are infected with parasites. Two interesting cases were shown me by Dr. Bird, of Dordrecht. Both men had been in the habit of drinking the water which washed the ground their cattle grazed on, and from both men, Dr. Bird told me, large quantities of echinococci came away after protracted illness; the one man had coughed them up at intervals; from the other they were removed, an abscess having formed over the chest. I would recommend intending travellers to furnish themselves with a small pocket filter. Pleuro-pneumonia at times makes sad havoc amongst the herds, and at Dordrecht I first saw inoculation practised; it is said to be effective, but is on a par for cruelty with the old custom of small-pox inoculation. The diseased lung of a dead animal is placed in a vessel, and tapes are immersed in the liquid draining from it; these are then passed through the tail of the young cattle; severe inflammation sets in and the tail occasionally drops off. When I first journeyed through the colony I thought there was a species of African ox analogous to a Manx cat, but now it was all explained. These oxen have a large hump over the shoulder which is the connoisseur's tidbit.

Aliwal North was my next halting place. An unwilling prisoner at first, when I found the good company I had got amongst I became a very willing one. Heavy rains had occurred towards the source of the Orange River, and it was then 60 feet above its high water-mark; about as broad as the Thames at Westminster, it rushed along at a rapid rate; the pontoons were carried away, and no boat could face the current; all traffic was stopped, and dozens of great waggons crowded each bank.

The peculiarity about these rivers is that the banks rise high above the ordinary high-water level. Were it not for this, the ruin to the country at these times would be overwhelming.

Aliwal North stands on the south bank of the Orange River; near it are hot springs containing sulphur, and having an odour of sulphuretted hydrogen. The town is prettily situated, 3,000 feet above the sea. Its many gardens of figs, grapes, and peaches, with their quince hedges, add much to its appearance.

Aliwal North bears a good reputation. I was fortunate in learning its merits and demerits from one so well informed as Dr. Paul, the district surgeon.

I myself saw two phthisics who, certainly, were not cured, but who enjoyed life themselves, and whose lives were of use to others. They were both diligent workers, and they could constantly remain out of doors, even at night. I shall never forget those clear balmy nights at Aliwal—my friend's garden, a little fairy scene; Chinese lanterns hanging from the boughs; a little knot in among the grape bushes chatted and laughed till the small hours of morning; and then those rides with the doctor to see a distant patient in the country. Who would not be an African doctor, always riding through that air!

Now the river went down sooner than I wished, and allowed me to cross over from British to Free State territory.

Rouville, a small village, 18 miles from the river, was our first resting place. We passed few houses on the road; yet, when we neared Rouville, a vast concourse of people were gathered there. Where they came from was a puzzle; but there they were—many thousands—come to see the Rouville races. We reached the Caledon river, 9 miles farther on, at night—only 27 miles in a day, and that by post cart was not good speed. We now began to find the travelling appointments not equal to those of Messrs. Cobb, Gray, or Fletcher; and how often is it the case that you pay high for a bad article? The fare from Rouville to Smithfield—18 miles—is 15s. The owner lives half way, and is paid there. I carried a moderate-sized portmanteau. It weighed but 50 lbs., but it did not escape the keen eye of the Dutchman. It was weighed, and I was mulcted in the further sum of 40s. for extra luggage, 10 lbs. being all he would allow to go free. Here was an anomalous state—15s. for myself, 40s. for my portmanteau! I thought if he would charge passengers at the same rate (1s. per lb.) what a fortune he could make. His decision was law. This was the only instance of overcharge I could complain of. Then, finding that a farmer was going to Smithfield, he showed his consideration for his horses by packing off mail bags and passengers in the farmer's waggon. It is needless to say punctuality is not a peculiar feature of such postal service, but from one we must not judge all. I have seen post-boys swim dangerous rivers. I have seen them, regardless of their lives, cross rushing torrents, and all to deliver the mail bags punctually. The horses, generally, are good, their speed

rapid, and they rarely slacken it, save now and then for a second's blow at the top of a high hill. Then off they fly again.

From the Orange River to Bloemfontein the country rises by gentle gradients which, in the 120 miles, amount to about 2,000 feet. At Smithfield we fell in with a farmer who was going to the Free State capital, and we joined his waggon. We had a large party in that waggon—8 in all, including three women. We got along famously, though I could speak no Dutch and they could speak no English, but a travelling companion was interpreter. As night approached, I began to speculate on our probable resting-place, for we rarely saw a house. I learned that we were making for a farmstead where we would find comfortable quarters. Night had been over us for two hours when we reached our resting-place. Travelling at night in Africa is not attended with that safety which those accustomed only to British roads might suppose. In Africa a road may be passable one day and not so two days afterwards. Heavy rains may cut deep dykes through it in all directions. The African weather clerk adopts no half measures; it either rains with a will, or it is sunbright.

My friend's description of this resting-place was flattering. I believed him. The extent of the farm (6,000 acres) justified my faith. But, alas! how different are our ideas of comfort. This farm-house had two rooms. There were no doors, windows, or chimneys! Door-ways there were two; and, as substitutes for doors, reeds were tied together and propped against them. This was a protection against snakes, which are too common in the neighbourhood. But our host had no fear of house-breakers—they are unknown. Let the reader imagine the poorest hovel in these British isles, and it would favourably contrast with the one we entered that night. I did not before or afterwards see anything so miserable in Africa. The room we entered was dimly lighted. At one end there was a bed, screened from the rest of the room by mats standing four feet from the ground. This was occupied by our host, a middle-aged, jovial, good-humoured boer, his young wife, and child. Benches along the walls, a chair or two, and a small table, complete the furniture. Hanging from the roof was a quantity of dried deer's flesh. The Kaffirs call it *biltong*. Colonists relish it, and I have no doubt it is nutritious, but my antipathy to raw meat and the horror of tape-worm overcame my desire to cultivate a taste for it. We found the room filled with transport-riders, who had outspanned for the night on

the farm. An animated conversation was kept up for a couple of hours. All this time I was on the look out for some signs of supper. My previous meal had been breakfast, so that my appetite was keen. The kurveyors retired to their waggons, and my hopes began to revive, but in vain, for our host had nothing to give us. However, we persuaded him to milk a cow in the kraal. This was put on the table, and with it a dish of cold boiled mealies (unground maize), the remains from more than one previous repast. These were accompanied by some cold cooked deer's flesh; yet, I relished that supper. Our host could not cook a fresh supply, for there was no fuel, he told us, and the statement was only too true. We had travelled through a country absolutely devoid of timber, even of brushwood. When a little fuel was gathered, a supply of food sufficient for some days was cooked. During all this time we heard loud talking, interspersed with snatches of song. We learned that a poor insane Kaffir woman had made her home outside; that she talked or sang incessantly; and that, at times, she became very violent. The chief of her tribe took her home, but she came back, and our host befriended her.

Supper over, we thought of rest. A fellow-traveller and I got the second room. The farmer and his friends lay in the room with our host. For us a bed was made up on boxes and skins. Its appearance was not elegant, but it was clean. In another corner was a heap, reminding one of a marine store—old harness, dried skins, and many other things, assisted in making it. We turned in, and our host bade us a friendly good night. From night-fall a thunderstorm had been working towards us. I can scarcely imagine a more weird spot than that—a hut, of primitive form, far from the haunts of men, outside it a woman madly raving, a night of pitchy darkness, save when the lightning flashed across the heavens. I lay in my clothes; my bed-fellow partially so. We were beginning to doze—the ravings of the mad woman still ringing in our ears, the storm already overhead, and the rain falling in torrents, when we heard a movement in the corner. Again and again it arrested our attention until, our patience worn out, we jumped up and made a search; but, as we could not remove the rubbish, we returned to bed no wiser, and, probably, left an unwelcome companion coiled up in its midst. We slept, how long I do not know, when the door was knocked down. The storm was still raging, and we thought the poor Kaffir had come in for shelter, for the raving outside had ceased; but it was a dog large enough

and fierce enough to maintain the situation. Next morning we visited the Kaffir. Her house had been made of some straw, put up like a stook; the rain had beaten it down, and she lay all night with no covering but the wet heap. We left her grinding a small snake into snuff, which, poor thing, she thought had some charm. We made an early start for Bloemfontein, our host and hostess having shown us every attention. I thought, as we left behind his pleasant face and good-humoured smile, that he deserved more of this world's comforts.

[*To be concluded.*]

ART. II.—*Notes of Surgical Cases.* By MR. EDWARD STAMER O'GRADY, M.R.I.A., Ch.M., M.B., A.B., University of Dublin; L.K.Q.C.P.; Surgeon to Mercer's Hospital; Fellow and Member of the Surgical Court of Examiners, Royal College of Surgeons; formerly Lecturer on Surgical Anatomy at the Carmichael School of Medicine.

TWELVE CASES OF EXCISION OF TUMOURS.

THE opportunities of operative interference for the removal of tumours, when they have reached a size of any considerable magnitude, and are so situated in the soft parts as to be capable of excision, *per se*, without sacrifice of an organ or limb, are of comparatively infrequent occurrence. Thanks, in great degree, to the affectionate remembrance borne to Mercer's Hospital by its numerous alumni, important surgical cases possessing features of marked and special interest are often to be met with in its wards; past pupils frequently sending thither cases when various circumstances incident to the condition of the individual patient prevent a home treatment.

To this feeling of kindly recollection on the part of many former students of the "old" and present Carmichael School of Medicine, and more recently of those of Mercer's Hospital, I have from time to time been indebted for a large share of important surgical cases—operative and otherwise. It has been my practice to keep accurate and more or less extended "notes" of the cases under observation in the hospital wards, by reference to which I find that twenty-three tumours—(using this word in the restricted sense as applied only to cases where the growth has been enucleated by excision from the soft parts, and under circumstances where the operation

for its removal could not be called by any distinctive appellation—i.e., excluding all cases involving loss of a limb or organ,* epitheliomata, the different polypoid affections, the various forms of growth in connexion with bone or cartilage, as also operative proceedings for the treatment of uterine, vascular, and cystic tumours, hernias, &c., &c.)—were excised, in my service at the hospital, of a nature and under circumstances which required the patients to be retained and treated as inmates of the institution.

It is from a comparison of the foregoing number as contrasted with that of other major operations (including the larger amputations) which have occurred to me during the same period that I have alluded to the comparative infrequency of the removal of tumours under the conditions already spoken of.

In some of the cases selected as the subject of this communication the growth was, from size, position, or nature, of deep connexions, such as to be of more than ordinary interest to the surgeon. In one, the last on the paper, the tumour was markedly melanotic, and seems to have been unassociated with any cancer development. It will be seen that in two cases (Nos. IV. and V.) the patients died. These are the only cases within my practice in which the operation for the excision of tumours has so ended, and, singularly enough, they both are examples of the liability of the *apparently* least dangerous and most promising cases to succumb unexpectedly. In no case that I have ever operated on was this issue less to be anticipated than in that of O. D. In one other instance (No. VI.) the patient died from the rapid development of internal disease after no long lapse of time from the operation (for removal of cerebriform cancer), which, however, not only was in no way connected with his decease, but had been a source of material relief to a very wretched sufferer. The local progress of the wound had gone on steadily to a favourable cure and healed soundly. The next ensuing case (No. VII.) seems to have been one of happy exemption from recurrence after removal by operation of the same disease.

From the patients attending the hospital as “externs” a considerable number of tumours, mostly of small size, have been removed. These, and the few which occurred in private or country practice, all did well. Amongst the latter was one (No. X.) which was the largest tumour (using this word as limited above) that I have yet had occasion to operate on.

* Such as breast and other amputations, excision, ovary, eye, &c., &c.

CASE I.—*Removal of large Tumour, involving the entire of left Cervical and Supra-Clavicular Regions, and passing deep down in root of the neck; Recovery.*

G. C. (No. 762); a small farmer, aged fifty-two, was admitted September 27th, 1870. The patient is a healthy-looking man, and states that he has always been in the enjoyment of excellent health. The swelling, he said, first began to be noticed about two years ago at the "butt of the neck," and has since steadily and rapidly increased, being, however, quite unattended with pain.

From Plate No. I., taken from a cabinet photograph, which gives a front representation of the tumour, it will be seen that it was of considerable dimensions, occupying the entire left side of the neck, extending so far outwards as in part to cover the shoulder, and dipping down in front overhanging the clavicle, it passed inwards beyond the middle line, lapping over and pressing on the air-tube. The integuments can be everywhere made to glide freely over the mass, which seems not to have any firm deep adhesions; it conveys to the hand the sensation of being heavy, and also of partial and indistinct fluctuation. For months past G. C. has been quite hoarse, and he says also that lately he has found difficulty in deglutition; hence his now consenting to seek surgical aid. The left pulse is much feebler than the right; several dilated veins cross the surface of the pectoral on the former side, and two somewhat enlarged but non-indurated and movable glands are to be felt in the axilla. Mr. William Colles, now Regius Professor of Surgery in the University, to whose unwearied kindness, in giving me the benefit of his great and varied experience in many cases of doubt and difficulty, I have so often been indebted, was good enough, as also were some of my hospital colleagues, to see this patient in consultation.

October 1st.—An incision about six inches long was made behind and nearly parallel to the external jugular vein, and the fascia divided on a director to an equal extent; a second cut was then made, running backwards from the inferior extremity of the first one. The integumental coverings were easily separated from the surface of the tumour; as this was done large veins and some nervous filaments presented on the capsule of the latter, and were carefully drawn aside. As the deeper regions of the tumour were reached, it became evident that a large portion had penetrated down behind the clavicle to a considerable depth. Whilst

Figure 1



Figure 2



prosecuting the intricate dissection in this most important region, a silver-bladed scalpel proved of great service, and, for the most part, sufficed to sever the deep connexions, but few of which were dense enough to necessitate exchange to an ordinary cutting knife. The great bulk of the tumour was taken away in one portion, but the capsule—though well marked and firm superficially—became thin and delicate on the deeper aspect of the tumour, and ruptured, and some lobules of the latter, which had but slender adhesion to the main mass becoming detached from it, were left behind. One piece, the size of a hen-egg, was adherent to the front of the trachea, and had to be dissected off it; another tail-like process dipped in between this tube and the œsophagus; whilst a third piece had wedged itself well in between the left subclavian and carotid arteries, both of which vessels were felt distinctly beating on either side of the finger as it was passed between them in its extraction. Fortunately traction sufficed to dislodge these latter processes; this effected, the removal of the tumour was complete. The bleeding had been but slight; only a few minor vessels required to be secured. The interior of the large cavity was swabbed over with a solution (40 grains to the oz.) of chloride of zinc, a dossil of oiled lint pendent at the lower angle of the cut introduced, and the sides of the wound and flaps supported by suitably applied pads and bandage.

During the operation, on one occasion, just as the bulk of the tumour was about to be detached, alarming syncope took place, requiring the prompt adoption of artificial respiration; a whiskey enema was also thrown well up. After a while the patient rallied sufficiently to admit of the completion of the operation. To my senior colleagues, Messrs. Ledwich and Dr. Mason, and to Dr. J. E. Kelly, who also kindly assisted me, my best thanks are due for their able and active assistance and co-operation during this trying and critical case.

The patient was placed in a well-heated bed, and surrounded by a number of hot jars. He soon began to rally, and, as he did so, complained much of pain and thirst. Ice and opium were given freely, and stimulants as his state seemed to require. Patient did well through the afternoon, and had a good night, getting four hours' sleep at one spell. At morning visit his pulse was 100; there was no pain. The oiled plug was withdrawn, and was followed by a copious discharge of stinking serous fluid. This, during the day, continued to be abundantly poured out, and so saturated the

compresses and bandages that all the dressings had to be renewed in the evening. The pulse had now mounted to 120. Though the stomach had been irritable at times through the day, some beef-tea, as well as soda-water and brandy, had been taken and retained.

The after-progress of this case can be briefly summarised. For some days the man was weak and low, troubled by hiccough and tendency to diarrhoea. He improved much, and the pulse came down under a nutritive dietary, with quinine and ferruginous treatment. The wound, though contracting in size, was indolent, and more or less in a sloughy state, disorganised *débris* coming away each dressing, on the injection of an aqueous solution of carbonic acid. On the 9th a large sloughy mass, the size of an egg, was extracted through the wound. From this time repair (the wound being dressed with ordinary stimulant applications) was rapid, the patient speedily convalesced, and he returned home quite well on the 8th of November, some days previous to which the photograph, from which Plate No. 2 is copied, was taken. One of the glands in the axilla had entirely disappeared, the other was much smaller. The enlarged veins over the pectoral region were also no longer observable.

The tumour, on examination, proved to be composed of a congeries of lumpy bodies, irregular in shape, and of various sizes, ranging from that of a nut to a large apple. On section they were generally pale, with red border, and studded with red spots gradually shading off, and some of them were seen to enclose or surround a second very similar, though of course smaller, structure. Its weight was 6 lbs. 5 ozs. The more superficial portions of the growth were surrounded by a strong capsule, and either incorporated into one another, or intimately united by a strong process, the connexions of the deeper portions being in places very slight, and the capsule very weak. In my collection is a drawing by Mr. Burnside, in water-colour, of this tumour. This I hope, some future day, to publish, in company with others bearing on the pathology of certain growths, and, in the meantime, will have pleasure in showing it to any professional brother who may feel sufficient interest in the subject to care to see it.

Of the after-progress of this case I can say but little. Some time after the patient's return home he wrote to me, without giving any address to his letter, that he was in excellent health. Long subsequent to this, about two and a half years after the operation, I heard, through one of the gentlemen attending the hospital, that a



man, whom my informant believed to be G. C., had died some short time previously of fever, and that no return of the tumour had occurred.

CASE II.—Removal of Large Fatty Tumours from Sub-occipital Region and Back of Neck; Recovery.

M. M. (No. 1,748), a labourer, aged fifty, was admitted February 17th, 1875, for a large tumour situate on the back of the neck, and encroaching considerably on the base of the skull, more so, in reality, than would appear from Plate III., where, from its position, the tumour seems, as it were, to droop away from its cranial attachment; the hairy scalp covers the upper part, and is intimately adherent, as likewise is the integument throughout, the tumour itself also giving the sensation of being firmly attached to the parts beneath; it was quite free from pain, and caused inconvenience only from size and sense of weight. At the operation the skin and scalp in the middle line proved to be inseparably adherent; this portion of its covering was surrounded by two elliptical incisions, and removed with the tumour. During the separation of the lateral integumental coverings the hæmorrhage was inclined to be free, and was carefully restrained by pressure, several small vessels being secured as the dissection progressed. As the tumour became fully exposed it was seen that tendinous bands crossed its superficial and deep surfaces, running from above downwards, and being most numerous towards the mesial line. These had very firm attachments above and below, as if the growth had been originally developed in and expanded the posterior ligamentous structures of the neck. When it was separated every patent vessel was secured, but there still was free oozing, to restrain which the sac was filled with sponges, and firm pressure made with the hand outside, whilst the patient was being removed to bed, and for about an hour subsequently, when it was gradually relaxed, and the sponges gently removed. Between the lax and redundant skin-flaps and pendent, at the lower angle of the wound, was placed a plug of lint, saturated with carbolised oil, and the flaps having been, in part, united by a couple of catgut sutures, were further supported by plaster straps and suitable compresses retained by bandage. After removal it was seen that the tendinous fibres on the anterior and posterior surfaces of the capsule of the tumour became fused and incorporated with it; the mass weighed 27 ozs., and exhibited, on section, the ordinary appearance of fatty tumours. The operation was well

borne, and the subsequent condition of the patient was most satisfactory. Five hours after it he desired to urinate, but found himself unable to do so; a full-sized gum elastic instrument passed in with all possible facility, and eight ounces of urine were drawn off. *Immediately* after M. M. fainted, and became badly collapsed; the pulse for several minutes was not to be felt at the wrist, the heart scarcely more than beat, surface cold, lips blue, and general appearance very alarming. Mustard sinapisms were quickly applied over the region of the heart and to the calves of the legs, hot punch and aromatic spirits of ammonia being also freely given. After a time the patient slowly rallied. The catheter had to be employed on four occasions subsequently; each time its use was preceded by an opiate and stimulant draught, and no further unpleasantness occurred. Some slight areolar sloughing took place, but the wound soon cleaned, and its progress to repair was steady and satisfactory. Owing to the locality and necessary shape of the flaps, they had a tendency to fall asunder, and it required much and constant care in the arrangement of the dressings to keep them duly supported. The patient was able to be up after a few days, and went home quite well on the 22nd of March, but little puckering, as shown by Plate IV., remaining from the, at first, apparently too redundant skin.

CASE III.—*Removal of a very large Tumour from the Right Parotid, Facial, and Cervical Regions; Recovery.*

M. S. (No. 1,437), a widow, aged sixty, was admitted September 22nd, 1873, for a tumour situated over the right parotid region, and encroaching on the side of the face and neck. It had been fifteen years growing, and now in size equalled that of a cocoa-nut with the husk on. The surface was nodulated, and intimately adherent to the region of the ear, the skin otherwise being freely movable. On manipulation the deep attachments of the tumour seemed very firm. Plates V. and VI. show its relative size and position, and render any extended verbal description unnecessary. The patient, a tall, wiry-looking woman, but with feeble circulation, says she has been healthy, and accustomed to walk long distances, but for the last year and a half the shaking of the mass, specially when the wind chanced to be high, made locomotion on foot or otherwise very painful.

At the operation, which took place on September 27th, all my hospital colleagues kindly gave me their able assistance. Two



incisions, enclosing between them an elliptical piece of integument an inch wide in the middle, were made, extending from the upper to the lower margins of the tumour, and *kept well forward on it*. The posterior flap or curtain of the skin was then shelled back, and the ear freed, by careful dissection, from intimate attachments. The integument over the anterior portion of the tumour was raised with the greatest ease, a firm fibrous expansion was next divided, and the growth was now grasped by a large and powerful vulsellum, which gave great assistance by lifting and drawing it in various directions, as the deeper portions of the dissection proceeded. The adhesions now were intimate, and a part of the tumour dipped in deep behind the jaw; excision here had to be effected with great caution, by repeated short touches of the knife. As far as possible, throughout this part of the operation, the silver scalpel was utilised, but the dense and intimate nature of the adhesions limited its applicability. As the dissection proceeded, the nutrient or other vessels were carefully felt for; however, fortunately, but few and small vessels were started, the bleeding from which was insignificant, and easily stopped by torsion or pressure. The surface of the wound was wiped out with a solution of chloride of zinc, and the old woman, who had become very feeble and weak, was removed to a warm bed as speedily as possible. The wound was for the time kept quite open, in apprehension of further bleeding when reaction should occur. An opiate and stimulant enema was given, and required to be repeated. Mrs. S. vomited, and was very low for a time, but gradually rallied. No hæmorrhage occurred, and the edges of the wound, except at the lower angle, which was left freely open, were brought carefully and evenly together by several points of catgut suture, and pads of lint, folded so as to support the skin and fit it into contact with its new bed, were adjusted and retained by plaster straps and bandages.

The weight of the tumour was 5 lbs. 8 ozs.; on section it was fatty, interspersed with numerous fibrous bands, and very firm.

For some hours opiates and iced brandy had to be freely given, and were retained; later on in the day some milk, and subsequently a little beef-tea. The catheter had to be used on two occasions.

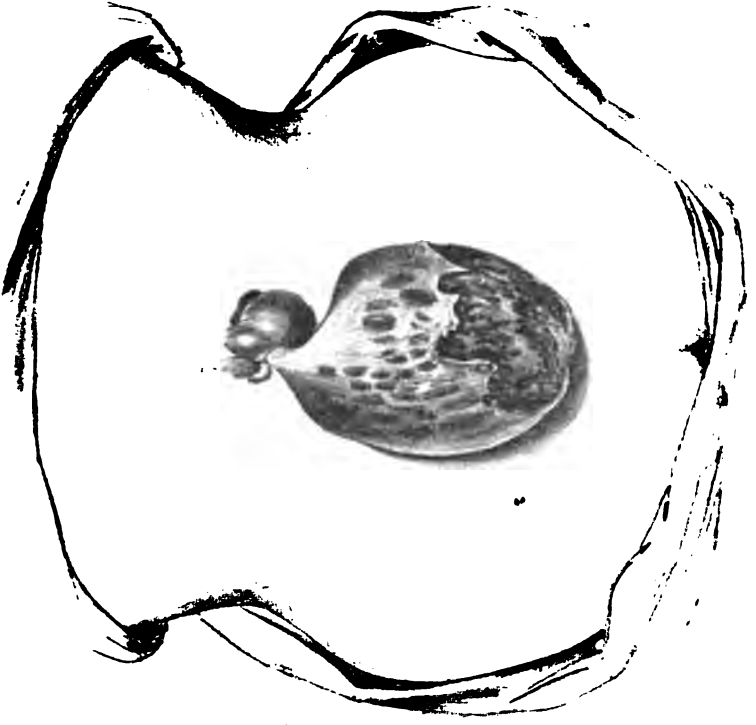
The next morning Mrs. S. was reported to have had a good night, and to have slept nicely for several hours. The pulse was only 76, and she said she felt well. There had been free discharge of a fœtid and sanguineous fluid; the dressings were so saturated

with it and deranged as to require renewal. The face was much swelled, and on the right side quite blank and devoid of expression. The weather being fine, Mrs. S. was carried out on the third day on a comfortably bedded stretcher to the hospital exercise-ground, and spent a considerable portion of the day in the open air. In a few days more she was able to be up and about, the wound healing kindly under ordinary stimulant and astringent applications—much care, however, being required in the daily dressings, to correct, by a combination of judiciously placed pads, a tendency which existed to “bag” in various places, especially near the ear.

This woman went home quite well on the 22nd October, convalescence having been retarded some days by a severe bilious attack, to which trouble she was often subject. The photograph from which Plate No. VII. is copied was taken prior to leaving hospital; it will be seen by it that the blank and expressionless aspect of the right side of the face was almost gone, and I have since learned that, after a little time, the puckered appearance of the skin at the operation site also faded away completely.

CASE IV.—Removal from the Dorsal and Lumbar Regions of a large Pendulous Tumour; followed by Death.

J. K. (No. 599), a tall, well-made girl, but who was then in feeble health and much emaciated, was admitted December 11th, 1869, for a pedunculated tumour of considerable size, the “neck” corresponding to the last dorsal and first lumbar vertebræ by a narrow insertion, which, however, had intimately attached to its upper and right side a small and globular-shaped piece, which made the combined circumference of what might be called the root of the tumour to be rather less than five inches at the level of the integument, hence the neck narrowed considerably, and again expanded into a large and pyriform mass, flattened on the anterior and posterior aspects. According to the patient's account the smaller globular portion had begun to grow about ten years previously, and had reached its present size in about one year, and had remained since without change and giving no annoyance. There was no further growth till four years back, when the larger and pendulous portion began and rapidly increased. Nearly a year since the posterior and more dependent part began to ulcerate and to bleed; sometimes the hæmorrhage was very profuse, and the patient now grew exsanguined and weak. Plate No. VIII. represents the appearance and relative size of the tumour; it has been copied from a water-



colour by Mr. Burnside, the girl being too nervous to be brought to the gallery to have a photograph taken. An attempt was made to improve her condition by the exhibition of good food and tonics, but she lost rather than gained ground. A partial catamenial period came on immediately after she entered hospital, and a few days after this ceased it was determined not to postpone the operation longer.

December 21st.—The patient having been placed lying on her left side, two elliptical incisions—the under one being first made—circumscribing the peduncle and smaller portion of the growth, enabled it to be easily removed, the attachments, which were merely integumental, giving way with the greatest facility; there was a tendency to free hæmorrhage, eleven vessels requiring to be secured by ligature or twisting; whilst this was being done only a small portion of the wound was exposed at a time, steady pressure being maintained over the rest of its surface, and thus there was not more than from an ounce and a half to two ounces of blood lost altogether. The edges of the integument came easily together without traction, and were united by half a dozen sutures, the parts also being duly supported by straps of plaster, supplemented by pads and bandages. The patient bore the operation remarkably well, and passed an easy day; the catheter was used twice; on each occasion there was an abundant secretion. The ensuing day matters seemed still to progress favourably; there was occasional tendency to nausea; a fair quantity of nourishment was, however, taken; the urine, which had still to be withdrawn by the catheter, was abundant and healthy-looking. On the morning of the 23rd it was reported that but an indifferent night had been passed, the patient not complaining of either sickness or pain, but being very restless. Opiates were given regularly, also wine and beef-tea at intervals. Prior to this morning's visit the pulse had not exceeded 100; it was now 108. A dark-coloured fluid had oozed through the wound and saturated the dressings; these were entirely removed and the sutures divided, when the lips of the wound fell open, and showed a quantity of firm, dark coagulum occupying its base. A large soft charcoal poultice was applied locally; on removing this the coagulum had fallen out, showing a healthy surface. The neighbourhood of the hip, on the side (right) on which the patient had been lying, had become red and tender; it was painted with a strong solution of nitrate of silver, and the patient turned on her back on a water cushion, with which change she expressed herself

as feeling very comfortable. During the day she partook of food and stimulants freely, and with relish; she continued also to take the quinine and muriate tincture of iron mixture which had been prescribed on the preceding day. In the evening she appeared to be gaining ground, and in the early part of the night slept well and soundly for several hours; but about 5 a.m. on the 24th, immediately after awakening, she suddenly broke out into a profuse cold, clammy sweat, passed urine involuntarily in bed, and stomach became very sick. The pulse was now 120, weak and fluttering; the patient conscious, but anxious and depressed. Every effort, including free use of ammoniacal stimulants, was promptly made to obtain a rally, but the pulse became more rapid and intermitting, and the sinking continued progressive. The girl remained conscious to the last, and for an hour previous to death (which occurred at 10 a.m., eight hours from the seizure and seventy-four from the operation) she complained bitterly of a "crunching" sensation at her heart—feeling, she said, as if it were being twisted out of her. At the autopsy, which was made twenty-two hours after death, the wound presented a healthy appearance. The heart was found to be small in size and fatty in structure, with fat also on the surface; the walls of the chambers were unusually thin; all the cavities, the right auricle being particularly distended, were filled with firm, tough, fibrinous clots, as also were the aorta and pulmonary artery. There was slight amyloid degeneration of the kidneys and liver.

The tumour, immediately after removal, shrank much in bulk; when weighed an hour or so after the operation it was 2 lbs. 8½ ozs. Its appearance on section was peculiar—the central portions of a fawn tint, in spots rising above the surrounding parts, and having a look and feel not unlike that exhibited by the cut surface of a testicle on longitudinal section; darker-coloured patches traversed it here and there; and around the circumference, more particularly at the inferior part, were several small cystic spaces, lined with slate-coloured membrane, and filled with a clear fluid. A water-colour painting of the pathological appearance, taken by Mr. Burnside, I hope also to use hereafter, as stated at foot of first case in reference to the drawing there alluded to.

The other case in which operation terminated fatally can be briefly given; it would be difficult to find one more calculated to dishearten the surgeon.

CASE V.—*Removal of a Fatty Tumour from the Perinæum; apparent Recovery, and subsequent Death from Pyæmia.*

O. D. (No. 1,627), a healthy-looking man, forty-two years of age, was admitted August 17th, 1874, for a tumour in the perinæum, which caused him great inconvenience and annoyance when walking. It had been growing about six years, and bore a general resemblance to the shape of a large kidney, which, however, it exceeded in size. Owing to the constrained position, as the man lay for the photograph from which Plate No. XVI. is copied, the peculiarity of shape did not "come out." The skin was quite free and movable over the tumour, as also was the latter on its deeper relations. On the 22nd the integument was divided lengthwise over it, and the mass extracted with no other pressure than what had been employed to steady the parts for the cut, a very small surface posteriorly being alone adherent to the skin or deeper parts. No vessels required to be secured; there was no bleeding, and a bit of lint (which was withdrawn the following day), steeped in carbolised oil, having been introduced at the depending angle, the flaps of skin were supported in the usual way by pads and bandages.

The progress of the case was all that could be desired; the wound contracted and healed rapidly, and by the end of the month was almost entirely cicatrised, the patient going about apparently in perfect health. He was to have left for home on September the 1st, but awoke that morning, anxious and depressed, feeling chilly and unwell, and with pain in the right chest. At morning visit the pulse was 140; temperature 103·4 under the tongue; the respiration was hurried; there was dulness on percussion, and rough breathing on right side; general condition very low. He was put on stimulants and free doses of quinine; the side to be well dry-cupped, and subsequently poulticed. On the next day O. D. seemed to be in much the same state; he said he felt better, but complained of pain in the upper part of the left leg; *he had also become quite deaf*. During the night he had a rigor, but in the morning considered himself to have improved. Pulse, 98; respiration, 28; temperature, 100; no expectoration or change in the condition of the chest. The principal trouble now was a severe pain in the left hip, which had seized on him suddenly; nothing amiss could be detected with or near the joint. Nourishment and stimulants are freely taken and retained, as also his medicine. Matters now grew worse and worse. On the 5th a

foetid enema was given, and acted satisfactorily, and twenty drops of turpentine were directed to be given every third hour. Eventually death took place on the 10th, profuse sweating and high temperature having been present for some days. On the day before death both knees rather suddenly swelled. *The deafness also disappeared the day before his decease*, the hearing returning, and becoming even acute. At the autopsy a small abscess was found in the base of the right lung, with surrounding inflamed tissue; there was congestion of liver and spleen, and pus in both knee-joints; no effusion into the other articulations. The kidneys were healthy; the renal secretion had been very abundant throughout.

Nothing, by way of comment, need be added to the foregoing case; its perusal carries the facts along. It notably illustrates a fact, by the occasional occurrence of similar results, now and then brought home to all surgeons, that at no period of convalescence can any patient with breach of surface be pronounced safe. So far advanced was the subject of the foregoing case towards recovery that it was a mere matter of accident that he had not arranged his return home for the day before the seizure. Fortunately our acquaintance with pyæmic complications in Mercer's Hospital has heretofore been very scant.

As already stated, in but these two cases, out of the entire number operated on, have any of my patients died after the excision of tumours. In one other case—the only one of a similar character that has occurred in my own practice—death supervened at an early date after the healing of the wound, but from causes quite unconnected with the operation, which was a source of great relief to the patient, whose case, in various ways, was one of much interest.

CASE VI.—*Removal from Loin and Back of a Cerebriform Tumour; Local Cure; subsequent development of internal disease.*

T. B. (No. 1,680), aged forty-five, was admitted October 23rd, 1874, for a swelling the shape and size of a "penny-roll," which lay along the right loin and side of the back, covering the false ribs, corresponding, lengthwise, to the long axis of the body, and extending inwards nearly to the middle line. The growth felt very firmly attached, and gave a well-marked feeling of fluctuation, especially at the lower, which also seemed to be the more superficial, part. It had been diagnosed, the patient said, as cystic, and a proposal made to tap it. The man's appearance was indicative of

great suffering; he was pale and unhealthy looking; his appearance, however, he very positively asserted, had been for many years quite unchanged; he had expectoration, and complained much of difficulty in breathing, saying that he felt, as it were, tied down by the tumour, and that it prevented his ribs from rising; he could no longer work at his trade as a tailor. The urine was quite normal. During a short preparatory treatment by good feeding and ferruginous tonics, different consultations were held, and it was determined to accede to his wish and remove the growth. This was done on the 29th, a free longitudinal incision being made over it, and the skin, a muscular investment, and subjacent strong and firm aponeurotic covering were successively divided on a director; when the tumour was thus exposed it was seen to be capsulated, and to lie deep in the furrow along the spine. The capsule was adherent in some places to the neighbouring aponeurotic structures, but was not perforated during the separation; the wound was well wiped out with a solution of chloride of zinc. No vessel required ligature, but, on account of oozing, lint steeped in turpentine was placed in the cavity and retained by a few points of suture, the dressing being completed by towel compresses and roller bandages. After the operation the patient rallied well, and expressed himself as feeling greatly relieved; he had a good night, sleeping well with a single opiate. Next morning the dressings were very offensive, being saturated with a quantity of foetid oozing; they were removed, as were also the sutures, and a large charcoal, subsequently changed for a fermenting poultice, applied to the region of the wound.

During the ensuing three weeks, in my unavoidable absence, my senior colleague at the hospital, Mr. Ledwich, kindly took charge of T. B. with my other patients. On resuming duty, November 23rd, I found the man doing well, and improved in appearance; the expectoration and dyspnœa lessened; the wound was much contracted and nearly filled up with healthy granulations.

Early in December intense pain in the right hip, and running down the thigh, began; there was also now returning dyspnœa. Repeated examinations of the chest yielded no marked evidence, but the belief of those who saw the case was that malignant deposit was taking place in the thorax; no enlarged glands could anywhere be detected. Reparative action continued unchecked in the wound, and it cicatrised, but the pain in the hip grew worse and worse. Every effort to afford the man relief from it, or from the severity of the dyspnœa, utterly failed; his face assumed, in a marked degree,

the characteristic hue and aspect which surgeons are familiar with in the advanced stages of malignant disease. Day by day he obviously lost ground, and at last—disheartened and broken down—by his own desire, he left the hospital on the 18th December. He lingered but a short time at home ere he died.

Examination showed that the cancerous mass in this case was distinctly capsulated; it was removed without breach or rupture of the capsule, weighed thirteen ounces, and, on section, presented to the eye the well-known appearance of “soft cancer;” the results of microscopic examination were confirmatory.

CASE VII.—*Removal from beneath Ear of a Cerebriform Tumour ;
Recovery.*

In the succeeding case the tumour also presented, in a marked degree, the appearance of cerebriform cancer; fortunately for the patient the growth was enclosed in a well-marked and distinct though delicate capsule, which was also but little adherent. The happy result is in marked contrast with that of the foregoing case.

In December, 1871, in company with Dr. Frederick Flynn, I removed from an unmarried lady a tumour about the size and shape of two marbles; it was situated immediately beneath the right ear, and carried forwards its tip. The superior portion of the growth had been present for several years, the lower part had only recently formed, was quiescent for a time, and, after a period of great family grief and anxiety, had lately begun to grow rapidly; to the touch it was soft and fluctuating below, firmer above; the cutaneous covering had also become discoloured. An incision of an inch long, made in the direction of an integumental crease, and merely going through the very fine skin, exposed the capsule; the handle of the knife was easily passed under the little growth and turned it out. During removal the capsule burst and extruded the contents, which to feel and eye presented all the characters of cerebriform cancer. None of the contents escaped into the wound, which, however, was well washed out and cauterised. The little cavity supplicated freely and the patient recovered but tardily, the wound not healing soundly for a few weeks. I regret having mislaid the report of the microscopic examination, kindly made for me by an able friend; it was confirmatory of Dr. Flynn's and my own worst apprehensions. Dr. Flynn has kindly informed me that the lady still (June, 1875) continues well, and there has been no appearance of any return.



Plate X



CASE VIII.—*Removal of Tumour of Abdominal Parietes which, in appearance and feel, closely simulated a Hernia ; Recovery.*

M. D (No. 1,543), aged forty, the mother of six children, admitted March 19, 1874. About sixteen years ago she first noticed a "kernel" on the side, which she was taught to regard as a rupture; this gradually increased in size, was painless, but caused much and progressively increasing annoyance from chafing against her clothing, and, as a consequence, getting ulcerated in different places on the upper and lateral surfaces. The tumour was pedunculated, its length being over eight inches, the circumference at the neck, which was attached about an inch above the crest of the ilium (on Plate No. X., copied from a photograph, the attachment appears, from the traction of the tumour, wider and lower down than it really was), measuring less than three inches, the wider part near the base being eleven inches. When grasped the tumour gave the sensation of receding partly into the abdomen, and, on the patient coughing, received a distinct impulse; when put on the stretch, however, and held by the fingers round the "neck," it was obvious that no impulse really existed. In removal an elliptical flap was preserved from the under surface where the skin was healthy; the growth was suspended by a firm fibrous capsule, and from the neck or root there extended forwards and inwards for three inches on the abdominal wall, and above the crest of the ilium, a caudate process, which, however, was easily followed and removed; the little wound healed kindly, and the woman was discharged quite well in less than a fortnight. The tumour was fatty and weighed a pound and a quarter.

About the time the subject of the foregoing case was in hospital, there chanced also to be under observation another woman who had a large ventral hernia in which fæcal matter had become deposited and rendered temporarily irreducible; there was no impulse whatever on coughing, the surface was marked by cicatrices of ulcers, caused by the abrasion of the clothes. As the result of age and increasing size, the protrusion had become distinctly pedunculated, *vide* Plate No. IX., taken from a photograph. In general appearance and feel it contrasted curiously with the preceding case, as may be seen by the two illustrations standing side by side.

CASE IX.—*Removal of a large Tumour, which was adherent to the Sheath of the Common Femoral Vessels, from the Groin and upper part of the Thigh; Recovery.*

P. R. (No. 1,567), a tall and healthy looking man, sixty years of age, was admitted April 28th, 1874, for a tumour of large size, occupying a considerable part of the left groin, and extending nearly half way down the thigh; this had been growing uniformly for fifteen years, and had now reached the dimensions of a good-sized cocoa-nut; it was knobbed and irregular on the surface, on which coursed numerous enlarged veins (the lithograph does not show these at all as distinctly as the photograph from which Plate No. XI. is taken). The feel of the mass was that of a fatty tumour—in parts, however, so yielding as to be almost fluctuating; the integumental coverings were freely movable, but the broad base of the tumour was firmly attached, being quite immovable on the subjacent tissues. The patient stated himself to be a man of unusually temperate habits as regards the use of alcoholic liquors and of flesh meat; he does not smoke, but has been wont to chew tobacco, though in small quantities; he regards himself as in excellent and robust health, having never been ill, except from occasional attacks of dyspepsia. However, on examination, he was found to be generally “flabby,” with very weak cardiac action, the second sound being absent, and the larger vessels having a tendency to be atheromatous; urine quite normal.

May 4th.—A long incision in the direction of the axis of the limb easily enabled the superficial structures to be separated from the anterior and lateral surfaces at the capsule of the tumour. In consequence of the numerous enlarged veins which ramified over its superior portion prior to terminating in the saphena vein, the cut was begun below the upper fourth of the swelling, and was carried somewhat irregularly downwards, so as to avoid, as far as possible, damage to other large veins so plentifully distributed over the surface. On its deep aspect the tumour was not so easily detached, processes from it dipped in to deeper attachments; in places the capsule was so inseparably adherent to the deep fascia as to necessitate removal of portions of this structure with the tumour; thus, owing to the special intimacy of the adhesions in this locality, the sheath of the vessels was unavoidably opened, and both the artery and vein were exposed for some inches of their course. The hæmorrhage was slight and easily controlled; only a few small



Fig. 1.

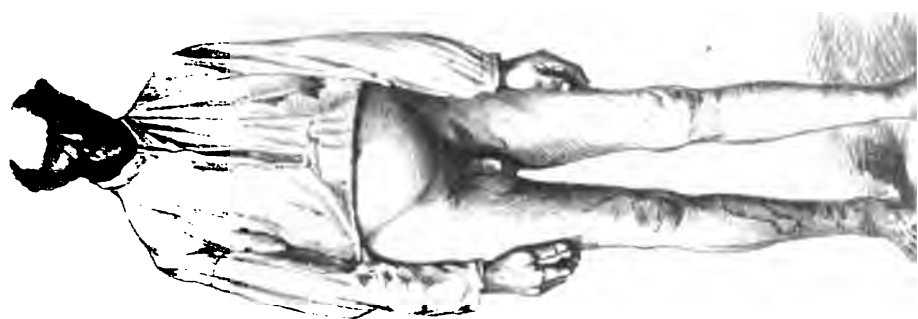


Fig. 2.

vessels required to be secured. After a pledget of lint, steeped in "carbolic oil," had been laid in the bottom of the wound and pendent through the lower angle, the cut edges of the integument were brought together by half a dozen points of carbolised catgut suture, and the parts carefully supported by pads and bandages.

The operation was well borne and quickly rallied from. On the morning of the 6th the dressings, which had become saturated with the exudation from the wound, which was both "profuse and ill-smelling, were removed, and the pledget of lint withdrawn; a small quantity of sanguineous and very foetid fluid oozed out after it. Whilst dressing the wound the patient became sick and vomited profusely (there had been no sickness of the stomach since the operation); the belly was excessively tympanitic. After a large and soft charcoal poultice, well supported in place by "tails," had been applied to the wound, an assafoetida and turpentine enema was thrown up; this had to be repeated, and the red mixture to be given by the mouth before the bowels acted. After this matters went on well, though for some days the patient's general state required a pretty free use of alcoholic stimulants. Primary union failed to occur between the edges of the skin, and the appearance, at the bottom of the wound, of the exposed femoral, each day seeming to come closer to the surface, for a time caused anxiety, all the more as the man could not be kept quiet, persisting in getting up and moving about the ward. In a fortnight after the operation he had to be allowed his clothes. Matters, however, continued to progress favourably, and when he left hospital, on June 12th, the wound had all but entirely cicatrised. The photograph from which Plate XII. is copied was taken at Thurles, and not for some considerable time subsequent to his return home, long after the wound had become well and firmly healed. For the photograph I am indebted to the kind thoughtfulness of my old friend, Dr. M. J. Barry, from whom I also learned some time since that P. R. had remained quite well.

The tumour was composed of a very bright yellow fat with fibrous septa in the upper two-thirds of the mass; it weighed three pounds.

CASE X.—Removal from upper and outer part of Thigh of a Tumour weighing over eight pounds; Recovery.

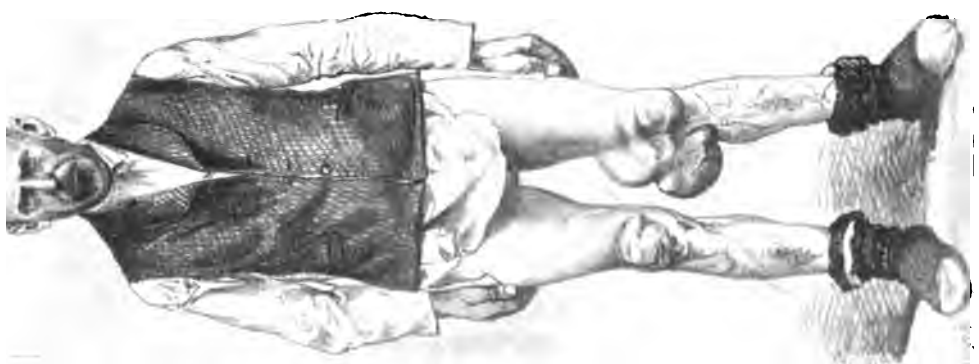
This patient was brought under my notice by the late Dr. M'Auliffe, of Abbeyfeale, who, like so many of our craft, enfeebled by over-work and exposure in an extensive and wild mountainy

district, when he had become himself stricken by the prevailing fever, fell a victim to it, whilst he ought to have been still in the fullest vigour of early manhood. Our patient was a farmer, who for several years had growing on the upper and outer part of the left thigh a fatty mass, which gradually increased till it had acquired large dimensions, and caused excessively unsightly deformity, which no arrangement of the clothing could conceal. Unfortunately, owing to the special circumstances of the occasion, no photograph or drawing was obtainable; such a representation would have been of great interest, as the tumour was allowed to attain a bulk, of late years, rarely to be found even in the remotest parts of this country. The various regions of the thigh, more especially the superior, are favourite localities for fatty tumours. I have seen several of large size, but they usually caused so little annoyance, often growing very slowly, that the patient would not submit to their removal. It not infrequently happens that he carries the tumour to his grave, almost unconscious of its presence, unless at a late period mere fatigue, from the weight or unsightliness of appearance, as in the present case, compel him to seek surgical aid, or, it may be, that he is driven to do so from the annoyance and fright consequent on some accidental chafing causing the surface to ulcerate. Assisted by Dr. M'Auliffe, the tumour was removed on the 25th of November, 1870. The shape and size of the growth necessitated an incision of over a foot in length; through this it was extracted with great facility, the deep attachments being insignificant, and few minor vessels alone required to be secured by ligature or torsion, and the wound was simply dressed by plaster straps, compresses, and bandages. Dr. M'Auliffe was kind enough to inform me of the subsequent progress of the case. A smart feverish condition supervened, and continued for some days, after which repair progressed rapidly, and the wound became entirely healed in a few weeks. The cicatrix subsequently contracted to a length of a few inches. The tumour, it was ascertained, weighed over eight pounds, and more than filled the wash-hand basin in which it was placed on extraction.

CASE XI.—Removal of a Fibro-fatty Tumour, situate on both Thigh and Leg, and involving the deep structures of the Popliteal Space; Recovery.

T. F. (No. 1,385), aged sixty-six, was admitted July 3rd, 1873, for a large tumour on inner and posterior aspects of left thigh,





knee, and leg. Its general relations to the limb are shown in Plates XIII. and XIV., which, however, fail to represent the varicose condition of the veins, ramifying over the surface of the tumour, and on the leg below. According to the patient's statement, it had been eight years growing, and for the past few weeks has been ulcerated in two places; hence his now seeking surgical aid. One of these ulcerated spots, of considerable extent, is to be seen in Plate XIV. Above the middle a constriction seemed, as it were, to divide the mass into two portions; it appeared to be pretty movable on the deeper parts. A few days after admission excision was practised; a long incision with two elliptical branches, to include the unhealthy skin adjoining the ulcerated spots, was made along the inner or projecting border. The coverings were easily reflected; the deep surface, however, was much more adherent than had been anticipated. A large piece of the tumour dipped down deep into the popliteal space, there lay on, and was in part adherent to a congeries of large veins. Some of these were unavoidably wounded during the removal of the tumour (in the deeper portion of the dissection in this and in Case No. IX. the silver-bladed scalpel was used as far as possible, and proved of the greatest value). Fortunately no evil consequences followed; slight pressure arrested all hæmorrhage; no ligatures were required. The parts were supported by plaster straps, and the limb bandaged to a well-padded gutter-splint.

During the first two days there was some annoyance from sickness of stomach and general restlessness, accompanied by a considerable exudation of foetid fluid from the wound. Reparative action was now rapidly taken on; in a week the patient was able to be up, with a light wooden splint behind the joint, and in less than a month he went home quite well. Plate XV. is copied from a photograph taken before he left town; the varicosed and enlarged veins had entirely disappeared. The tumour in this case weighed $3\frac{1}{4}$ lbs., and was composed of a firm, hard fat, intersected with numerous fibrous stroma.

CASE XII.—*Removal of a Melanotic Tumour from the Left Supra-Scapular Region; Recovery.*

Melanosis is so rare a complication of tumours that, if for no other reason, a case of this affection may be here briefly alluded to.

M. R. (No. 1,317), a widow, aged fifty-five, in comfortable circum-

stances, was admitted April 15th, 1873, for a tumour the size of an egg, situated over the left supra-scapular fossa. It presented a curious appearance, having a black, prominent top, and being covered with glistening scales. The patient stated that it had been three years growing, but had been very small till after an attack of jaundice, which occurred a year ago, and during which she suddenly lost the sight of the right eye. Since that time the growth has been increasing rapidly. There is no family history of cancer. The tumour was removed on the 19th by two elliptical incisions. The mass, extending somewhat deeply, was carefully dissected out. Mrs. R. did well for four days, when she received a letter from some gossiping neighbour, who informed her that her death had been reported as imminent, and asking for directions as to how some funeral arrangements should be carried out. This occurrence had a most depressant effect; it well nigh cost the poor woman her life, and undoubtedly long delayed the healing of the wound, which progressed but slowly, and was not entirely cicatrised till the middle of June; the patient then went home quite well. On section the mass was seen to be of varying shades of black throughout. Under the microscope no "cancer cells" were detected. There is an interesting water-colour of the appearance of the tumour and of its section in my collection, from the able pencil of Mr. M. J. Fitzpatrick. A young friend, a student of medicine, who lived near Mrs. R., kindly kept me posted as to the progress of this case. From him I learned that she died of "fever" about a year and a half after the operation. There had been no appearance of return, the site of the wound being quite healthy to the end of her life.



PLATE XVI



PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Cyclopædia of the Practice of Medicine. Edited by Dr. H. von ZIEMSEN, Professor of Clinical Medicine in Munich, Bavaria. Vol. I. Acute Infectious Diseases. By Prof. LIEBERMEISTER, of Tübingen; Prof. LEBERT, of Breslau; Dr. HAENISCH, of Griefswald; Prof. HEUBNER, of Leipzig; and Dr. OERTEL, Munich. Pp. 708. Vol. II. Acute Infectious Diseases. By Prof. THOMAS, of Leipzig; Dr. CURSCHMANN, of Berlin; Dr. ZUELZER, of Berlin; Prof. HERTZ, of Amsterdam; and Prof. VON ZIEMSEN, of Munich. Pp. 751. London: Sampson Low, Marston, Low, and Searle, Crown Buildings, 188, Fleet-street. 1875.

AT the request of Dr. H. von Ziemssen, Professor of Clinical Medicine in Munich, a number of the most eminent clinical instructors of Germany have undertaken to prepare, in a series of independent treatises, a complete "Cyclopædia of the Practice of Medicine;" the incentive to this labour being the great need which has been felt the past year or two of a work which should fully correspond to the present standpoint of clinical medicine. This Cyclopædia will embrace the entire range of special pathology and therapeutics, and it is expected will be completed in fifteen volumes, large octavo, of from 500 to 700 pages each. The list of contents of each volume, published in the prospectus, gives the names of the authors and the special departments which they have undertaken. While the work of each writer will bear the stamp of individuality, an effort will be made to give to each subject the prominence and space due to it only—that the harmony of the entire work may be preserved. It is designed that the Cyclopædia shall be, *par excellence*, a practical hand-book for physicians; and for this reason strict attention has been given to clear and systematic arrangement.

For the value of the whole work, as well as the separate departments, the names of the writers are a sufficient guarantee. Each volume will have a full and carefully-prepared index.

Messrs. Sampson Low and Co. announce that, by special arrangement with the German publisher and editor, they are publishing by subscription a copyrighted translation of this work; the two first volumes of this translation form the subject of the present notice. The translating will be done by professional gentlemen, many of them former students of the writers of the different treatises, under the supervision of a responsible chief. Great care is taken with the mechanical execution of the volumes. The type is large and clear, the paper fine, and the engravings electrotypes of the originals. It is proposed to publish four volumes a year, at, as nearly as possible, regular intervals, in order to distribute the cost of subscription equally over about four years.

Vol. I. and II. treat of Acute Infectious Diseases; Vol. III. Chronic Infectious Diseases; Vols. IV. and V. Diseases of the Respiratory Organs; Vol. VI. Diseases of the Circulatory Organs; Vols. VII. and VIII. Diseases of the Chylopoëtic System; Vol. IX. Diseases of the Urinary Organs; Vol. X. Diseases of the Female Sexual Organs; Vols. XI. and XII. Diseases of the Nervous System; Vol. XIII. Diseases of the Locomotive Apparatus; Vol. XIV. Diseases of the Skin; Vol. XV. Toxicology.

The two first volumes—Acute Infectious Diseases—comprise articles on abdominal typhus (typhoid fever) and the plague, by Prof. Liebermeister; on exanthematic typhus, relapsing fever, and cholera, by Prof. Lebert; on diphtheria, by Dr. Oertel; on yellow fever, by Dr. Hænisch; on varicella, measles, and scarlatina, by Dr. Thomas; on variola and varioloid, by Dr. Curschmann; on erysipelas, and miliary fever, by Dr. Zuelzer; on malarial infection, by Prof. Hertz; and on epidemic cerebro-spinal meningitis, by Prof. von Ziemssen.

In an "Introduction" of thirty-three pages, Prof. Liebermeister brings us at once into the outposts of medical advance. Under the name *Infectious Diseases* are grouped together those affections which we know, or at least believe, must originate through the infection of the system with certain peculiar poisonous matters, which are mainly distinguished from the ordinary poisons by the fact that they can reproduce themselves under favouring conditions to an endless degree; and it is easy to foresee that when investigations have been prosecuted further in the direction of their etiology, that infectious diseases will be found to occupy a far wider field than now is commonly given to them. If the poisons which produce infectious diseases can reproduce themselves and multiply,

we can understand why these diseases are, for the most part, *pandemic diseases*, or *epidemics*, for when they appear in a place they usually attack numerous individuals simultaneously or successively. And now, at the present day, the mortality from infectious diseases forms an extraordinarily large portion of the total mortality. All the other mighty casualties of nature—such as earthquakes, volcanic eruptions, mountain avalanches, hurricanes, inundations by sea—have never, in the history of the world, even approximately, destroyed as many human lives as a single ordinarily extensive epidemic. Even in war, it is well known that the devastation, which has been produced by the scientific instruments of death, is usually not so great in extent as that which has been produced by the infectious diseases that have broken out in the armies. Of all the great conflicts in modern times, the war of 1870–71 is the first example of an exception to this rule, for the number of deaths from disease were far fewer than the number of deaths from external violence. This result may, in part, have been due to the obstinacy of the struggle and the great number of the fallen; perhaps, too, to the somewhat accidental absence of typhus fever and cholera; but it is also certain that it was due, in a great measure, to the advances which the science of public hygiene has made during our time. For in looking for the causes that have operated to break the force of epidemics, we shall have, in the first place, to regard the advance of civilisation and the improved sanitary conditions under which we live as the most important of them; and, in the second place, too, our increasing knowledge of the nature of epidemic diseases and the way in which they are propagated.

Even the physicians of antiquity observed that in epidemic diseases the ordinary theories as to the origin of the disease were insufficient. They recognised that there was something extraordinary to deal with, and quite distinct from the ordinary phenomena. Thus they spoke of a *constitutio pestilens*; and even up to our time it has been customary to speak of a diseased constitution, an endemic and epidemic constitution, a *genius epidemicus*. But as to the nature of this constitution of disease, or its real cause, there were usually very few clear ideas. A variety of explanations, some comprehensible, and some not, were grouped under the name of “cosmo-tellurian influences.” In later times they have had a particular preference for the influence of atmospherical electricity or ozone. Among the different hypotheses is one, perhaps the boldest and most remarkable of all, that has finally, after manifold

mishaps, gained the preference over others. This is the hypothesis of a *contagium vivum seu animatum*, the theory that the poisons of infectious diseases consist of living beings or low organisms. Within the last ten years a great revolution has taken place with regard to the popular significance of a *contagium vivum*. New investigations on the appearance, mode of propagation, and the significance of the low organisms; new facts in regard to the extension of national diseases, and also a number of quite positive discoveries by numerous investigators, have removed the old opposition to the theory, or even been the means of furnishing definite proof of its correctness. The great scientific and practical value of this hypothesis consists in this, that it does not merely harmonise with the facts, out of which it was more or less directly evolved, but that it also furnishes a common standpoint from which to view numerous other phenomena, which otherwise would appear very remarkable, but which from this standpoint appear as necessary consequences. At any rate, it is now admitted, even by those who do not unreservedly acknowledge the theory of a *contagium vivum*, that it represents a view "which points more clearly than any other to order in the chaos of facts." In the large majority of infectious diseases, the poisons by which they are called into activity have been hitherto unknown; we judge of their presence and their peculiarities only from their actions, and from the diseases which they produce. Investigations into the organisms which lie at the root of all infectious diseases have scarcely been begun, so that it is evident that before the organised disease-germs can be regarded as among the well-authenticated facts for all, or even most of the infectious diseases, and before our more intimate acquaintance with the different excitants of disease shall furnish us better means for protection against, and cure of them, we have still in store for us a great expenditure of labour, time, and strength, as well as the need of favouring opportunities. Fortunately, the points of attack are sufficiently numerous, and a great number of zealous investigators have already undertaken the solution of these questions.

One of the peculiarities of the poisons by which the large majority of infectious diseases are called into activity, and which characteristically distinguishes them from all other poisons, is that *the poisons of infectious diseases can reproduce themselves and to an unlimited extent*. When, in considering the question of the infinite capacity for propagation that is shown by the disease-poisons, we

ask what similarity there is between the characteristic peculiarity of these and other poisons, we are able to enumerate two distinct classes of diseased action; and, in fact, from the time of antiquity these analogies have been repeatedly mentioned. The first kind embraces certain *chemical processes*; the second class embraces the *multiplication of living organisms*. Accordingly, if we wish to seek for analogues to the poisons of the infectious diseases, we can only ascribe them to certain chemical processes, or to living organisms. These two hypotheses, which alone explain the nature of infectious materials, have each found adherents. Among chemical actions it is chiefly the processes of fermentation and decomposition, which by their capacity for extension, by means of the smallest possible quantity of matter, show the most striking analogy to the contagious diseases. The name *ferment*, or *zymotic diseases*, has found an extensive application to the infectious diseases. The other hypothesis, also possible, is that of a *contagium vivum*. Since we know that those ferment processes, which here alone can be taken into consideration, and which are designated as fermentations, in the narrower sense of the word, are all associated with the presence and multiplication of low organisms, the theory of fermentation becomes virtually identical with the theory of a *contagium vivum*.

Besides the capacity for propagation possessed by the disease-germ, the infectious diseases exhibit still other peculiarities, which distinguish them from all other diseases; these peculiarities, too, are, in great part, of such a kind that they find their satisfactory explanation in the theory of a *contagium* or *miasma vivum*. A peculiarity of the infectious diseases, which they have in common with the poisons proper, or intoxications, but by which they also differ in the most marked manner from all other diseases, is their *specificness*, which shows itself in the fact that always, and under all circumstances, a given kind of disease is solely due to a given kind of morbid agent or cause. Predisposing causes may modify the susceptibility to, and determine the severity of, the attack; the kind of disease is entirely independent of them. The exciting causes of infectious diseases are accordingly of a specific nature, and this characteristic is quite as pronounced as in plants and animals. As it is impossible for a donkey to be foaled by a mare, so it is just as impossible for a man to have scarlet fever or measles from infection with the poison of small-pox. From the specificness of infectious diseases we reach the natural conclusion

that they never originate spontaneously, but are dependent upon a transmission, a continued propagation of the disease-poison—a conclusion which is very far from being generally accepted, as, perhaps, the majority of physicians hold the view that certain infectious diseases can, even in our day, originate, so to speak, autochthonously. Yet, from a glance at the errors of later times, we can scarcely doubt that the doctrine of continuous propagation has a future for it, and that at some time, not very far distant, it will be the generally accepted axiom for all infectious diseases. Belief in the equivocal generation of parasites—a law that, forty years ago, was recognised almost universally—has come to be generally regarded as an absurdity. Not a very long time ago it was almost universally accepted that merely the coincidence of certain especial conditions were necessary to cause the autochthonous appearance of a certain infectious disease. In more recent times the standpoint has been essentially changed. The potency of social squalor, decomposing filth, unfavourable weather, &c., as factors in the *extension* of infectious diseases, attributed to these causes, is not questioned; on the contrary, our knowledge of it has become more reliable and exact, but we have learned that the diseases do not *originate* in this way; we have gradually reached the conclusion that it is only where the specific germ of the disease exists by itself, or has been introduced, that those anti-hygienic factors become active, and may then be capable of occasioning an enormous extension of the disease; the germ, however, is not produced by spontaneous generation.

One of the most remarkable peculiarities belonging to many, but not to all, infectious diseases, consists in the fact that a single attack of the disease, successfully surmounted, bestows an absolute or relative *immunity* from it for a certain time, or even for the remainder of life. This fact is especially true in measles, scarlet fever, variola, vaccinia, typhus, and yellow fever. The question as to the cause of this immunity has not, thus far, been answered with definitiveness. The theory of a *contagium vivum* affords us certainly the best means of explaining such remarkable facts. We have here to do with a ferment process, such as was repeatedly alluded to in the first half of this century. If yeast be placed in a fluid containing sugar, fermentation takes place; but when all the sugar has been destroyed, and fermentation is complete, it cannot be produced again by a further addition of sugar; the fluid responds no longer to the action of the yeast.

The *division* and *classification* of infectious diseases rest upon an etiological basis, and there is scarcely any difference of opinion respecting its value as the best ultimate foundation for classification in these diseases. The most important and most in accordance with the nature of the exciting morbid agents, is the division of infectious diseases into *miasmatic* and *contagious*. *Miasm*, in the original and broadest sense, is the name for any material contained in the air that can produce disease. Later the term *miasm*, being brought into contradistinction with the term *contagium*, was used in a far narrower sense, and in this narrower sense it is now solely employed. It is usual now to speak of *contagium* as a specific excitant of disease, which originates in the organism suffering from the specific disease; while *miasm*, on the other hand, is used of a specific excitant of disease, which propagates itself outside of, and disconnected from, a previously diseased organism. Contagion can be conveyed by contact, from a diseased person to a sound one, produce the disease in him, and then again reproduce itself. *Miasm* originates from without; taken up into the body it can call a specific disease into action; but it cannot spread the disease any further by conveying it from a diseased to a sound person. There are diseases which are purely contagious, and diseases which are purely miasmatic. *Measles, scarlet fever, variola, vaccinia, typhus, diphtheria, glanders, malignant pustule, rabies, virulent ulcers and blennorrhæas, syphilis, pyæmia, and puerperal fever, are purely contagious.* In all these diseases the poison can be conveyed from one individual to another by direct contact; it can also follow *mediately* from instruments, from clothing, through third persons, and in many of these diseases by the air. Under favouring circumstances, many contagions can retain their vitality and power of infection for a long time, outside of the organism which produced them. But, under all circumstances, the poison has no special stage of development to pass through on the way from the infecting organism to the one to be affected; but at the time of infection it is essentially in the same condition as when given up by the organism yielding it. *The malarial diseases are purely miasmatic.* In them the morbid poison develops itself externally; its reception into a higher organism is not necessary for its reproduction, and therefore is something accidental for the life of the morbid poison; within the body it appears to vegetate for an indefinite time, and, indeed, so far as we can conclude from the symptoms, with phases of development that follow one another in rhythm. Thus far it has

not been known that the germs, reproduced within the human system, can be conveyed to other men, and can infect them, or that they can again escape from the body and reproduce themselves further. But besides the diseases that have been mentioned, and some others, whose mode of extension has remained in total obscurity, there are still other infectious diseases whose mode of extension we understand sufficiently well to be able to state, with certainty, that they can neither be reckoned among the miasmatic nor among the contagious diseases, in the sense of the definition. Chief among these are *cholera*, *typhoid fever*, *dysentery*, and probably also *yellow fever*, and the *plague*. There is no disease, perhaps, if we except only *vaccinia*, upon which so much has been written as upon cholera, and yet opinions as to the first and most important question—whether it is contagious or not? are not yet in full agreement. Both the opponents and the advocates of its contagiousness appeal to facts that apparently should be sufficient to place the solution of the question beyond doubt. In the first place it is not to be denied that cholera is seldom conveyed directly from person to person. Physicians and nurses of cholera patients are not much oftener attacked by the disease than other persons. Inoculation with the blood, the secretions, and the excretions, have yielded negative results. A French physician in Warsaw, who allowed himself to be carried away by scientific zeal so far as to swallow matter that had been vomited by cholera patients, did not die of cholera. On the other hand, innumerable men are attacked by cholera without having touched, or even seen a cholera patient. From these facts numerous observers have drawn the conclusion that cholera is in no way a contagious disease. Opposed to this, however, it is quite as firmly settled that cholera never appears in a locality without having been transported into it from an already infected locality. The number of exact observations confirming the truth of this statement, is already enormous, though in some epidemics, as in some cases of disease, it is natural that the transportation should not have been proved, so that there is scarcely a physician, in our day, who entertains any serious thought about an autochthonous origin of the disease; his doubts refer simply to the incomplete establishment of the facts. Among the vast amount of data which show that cholera only originates in places whither it has been brought by traffic, are the well-known facts that, at the time of the first cholera epidemic, it never happened in a single instance that cholera was more rapidly conveyed from one locality

to another than a man could travel by the ordinary methods of conveyance, and that the march of the epidemic always follows lines of travel. In America and other countries separated by the sea from the infected parts, cholera has never made its first appearance in the interior of the country, but always in the ports at which ships have arrived from infected districts. These facts have led the majority of physicians to consider cholera as an exquisitely contagious disease. The two opposing facts—that cholera is not transmitted from person to person, and yet can only be occasioned in healthy individuals through the medium of infected ones, can be assimilated, and the apparent contradictions almost be explained by supposing the hypothesis of the nature of infectious diseases advanced to be correct. The tape-worm, even, cannot be transmitted directly from one person to another; and yet it is well known that it only appears under this form after it has passed through a certain stage of development. If we think that a procedure, similar to what we know with sufficient accuracy, takes place in the development of the *tænia*, also takes place in the development of the cholera-poison—that, for example, the organisms which are at the root of cholera have, in their reproduction, to pass through two stages of development, the one outside the human body, and the other within; then the difficulty which envelops the affair is removed. The fresh discharges of cholera patients contain these organisms in the stage of their development in which, if introduced into the body of another, they do not reproduce themselves further, and can cause no infection with cholera; before they are again capable of it they must pass through another stage of development outside the body. This occurs when the discharges remain some time standing, but particularly when they come in contact with great quantities of organic substances that readily decompose, as in water-closets, dung heaps, sewers, or, too, in the soil of inhabited localities that are damp and rich in organic *débris*. In this stage of development there seems to be a considerable increase of the poison, and after this reproduction it is again in a condition to multiply further in the human body and produce the disease. Quite analogous conditions occur in other infectious diseases, which are neither to be enrolled in the list of miasmatic nor in that of contagious diseases, as, for instance, in typhoid fever, dysentery, and probably also in yellow fever, and the plague. Typhoid fever belongs to the *miasmatic-contagious* diseases; the disease is not contagious in the proper sense of the word, for it is

never transmitted by direct contact. It is not purely miasmatic, for external conditions alone are not sufficient to produce it. The presence of a person suffering from the disease, or of substances derived from such a person, is necessary; it requires the presence of the specific poison, a poison which is introduced and not developed spontaneously, and this specific poison finding an appropriate soil, produces an epidemic. The poison is propagated continuously; it travels from the diseased individual to the localities which are favourable for its growth and multiplication, and from these localities again into the human body. There are the same grounds for looking for the poison in the excrements in typhoid fever as there are in cholera. The circumstance that physicians, and nurses, and patients in the same wards, are seldom attacked, even if they handle the fresh excrements, seems to indicate that the poison, in order to become active, has to go through a certain stage of development outside of the body. This development can take place if the dejections are left to themselves, as in dirty linen; but it seems to go on more abundantly if the dejections are collected in privies, sewers, or ground already saturated with organic substances. The typhoid infection can be produced by the air we breathe, and the food or drink we swallow. There are reliable facts to prove that infection can be produced by the inhalation of the exhalations from privies, sewers, &c., in which the typhoid fever exists. It is hardly necessary to mention that the existence of infection by the way of inspiration, does not imply that the poison is a gaseous body. On the contrary, it is most probable that the infectious agents consists of minute particles of solid matter suspended in the air. The inspiration of the poison, moreover, does not imply that it passes from the lungs into the blood; it is equally possible that it passes through the pharynx into the alimentary canal.

The reason why most persons are so slow to believe that typhoid fever is never directly transmitted from person to person is, that they are unable to free themselves from the idea of a relationship between typhus and typhoid fevers. Typhus fever is, certainly, a disease which can serve as a prototype of those diseases which are directly transmitted from person to person. Whoever touches, or even comes near to, a case of this disease, is in danger of contagion. For this reason the greater number of the physicians and attendants who take care of such invalids are themselves attacked by the disease. In Ireland, in the year 1847, no less than 500 medical men—about one-fifth of the entire number—suffered from typhus,

and of these 127 died (Murchison). In the Crimean war, at the height of the epidemic among the French, out of 840 attendants in 12 hospitals, 603 were taken sick during a period of 57 days; more than 80 surgeons died of the disease in the course of the campaign (Griesinger). Niemeyer, in one epidemic, was obliged to employ a former felon, who had just recovered from the disease, as nurse, because all the attendants were sick. Similar experiences have occurred in all the epidemics of typhus fever. In hospitals, unless those attacked with this disease are strictly isolated, they will infect large numbers of the other patients. Entirely different from all this is the mode of propagation of typhoid fever. All observers, without exception, are at least of accord that, in comparison with the contagion of typhus, that of typhoid fever is very slight, and that direct contagion from person to person is not the rule in the latter disease. From a long experience, says Professor Liebermeister, I do not hesitate to go still farther, and to assert that the opinion that typhoid fever can be purely contagious, and can be transmitted directly from person to person, is not founded on actual observation. Such an opinion is only a relic of the past time, when the proper distinction between typhus and typhoid fever was not made, and when whatever was proved of the one disease was supposed to be partly true of the other. Typhoid fever, in reality, is never directly transmitted from person to person. There are, indeed, often enough cases in which one could suppose a direct contagion; but a closer observation shows that the assumption of another way of infection—the existence of a focus of infection connected with local causes—is not only possible, but usually more probable. In addition, there are numerous cases in which the possibility of infection by direct contact can safely be excluded.

On the Treatment of Typhoid Fever.—The observations of Professor Liebermeister, who is Professor of Clinical Medicine at Tübingen, will be read with interest in this country, which prides itself on its reputation for clinical celebrity—the more so, perhaps, as they suggest lines of treatment which are certainly more decisive than have been hitherto generally adopted here. As to prophylaxis, we are already familiar with a good many examples of what prophylactic measures can accomplish in the prevention of typhoid fever, and it is to be hoped that our knowledge of this subject will soon be greatly extended. Properly speaking, the study and enactment of prophylactic measures belong to the domain of Public Hygiene, or State Medicine, and typhoid fever is one of the

diseases best calculated to test the efficacy of whatever precautionary enactments may emanate from that source. As to *specific treatment* for typhoid fever there is none as yet discovered; yet inasmuch as typhoid fever is a disease which is generated by a specific poison, the supposition that a specific antidote might exist, and the consequent search for the same, are not as absurd as people thought them during that period when all therapeutic wisdom was supposed to have culminated in the expectant plan of treatment. But we certainly have a right to demand that in this search for specifics, as well as in all other scientific investigations, due caution and good judgment be used. The opposite of this has so often been the case, so many articles have been heralded as specifics, because some one had treated a few patients with them who did not happen to die, that every claim of the kind is received with a certain degree of justifiable scepticism. The fever cannot be aborted by the use of quinine and digitalis, as was claimed in France, nor by quinine alone, even when given in very large and frequent doses. Prof. Liebermeister's experience, at least after treating more than 1,500 cases with quinine in doses that would formerly have been considered as dangerous to life, gives no results that would indicate any specific influence of this drug over typhoid fever, nor any power to cut the fever short at any stage. The same may be said with regard to the cold-water treatment. At the same time, he considers that quinine, digitalis, and the abstraction of heat by cold baths, are among the most important antipyretic agencies, and are indispensable to the effective treatment of the fever. In regard to *symptomatic treatment*, he contrasts our present knowledge of the natural history of acute disease with that possessed by the ancient physicians. We know that even under purely expectant treatment, acute diseases run their regular course, and in due time terminate spontaneously. As a matter of course, we use specific remedies whenever we have reason to believe in the existence of such; but when, as is generally the case, we are satisfied that they do not exist, we do not, on that account, feel as if therapeutics could render us no aid. The disease will come to an end without any of our assistance, but the special business of the physician is to see to it that the patient outlives the disease. And this duty can often be accomplished by the application of symptomatic treatment, in its wider sense, as well as through dietetic regulations. On the one hand, we must see to it that the usual incidents of the disease, if they show a tendency to grow especially burdensome or dangerous, as

well as any suspicious accidental developments, are held within check, and, so far as possible, weakened in their power; on the other hand, we must strive to maintain the patient in such a condition that he shall be able to offer the longest and the strongest resistance to deleterious influences of which the constitution is capable. Our endeavour is no longer, like that of the mariners of old, to appease the fury of the storm-god by offerings and by prayer; it is enough for us if we keep our good craft seaworthy, and steer her safe 'mid rocks and quicksands; the storm will cease without our bidding when once its fury is spent.

Antipyretic Treatment.—By far the greater number of those who succumb to typhoid fever die from the effects, directly or indirectly, of the fever-heat. If we could guard our patients against the deleterious influences of excessive animal heat, typhoid fever would no more belong to the specially dangerous diseases. The danger from the fever, in typhoid fever, has very little to do with the danger from consumption of the tissues of the body, due to increased combustion. The condition of the cadaver, after death from this disease, must convince any one that the wasting of tissue has not come anywhere near the point where it is dangerous to life. The true danger consists in *the deleterious influence of a high temperature on the tissues*, by means of which necrobiosis of the same is brought about, manifesting itself, anatomically, as parenchymatous degeneration. Paralysis of the heart is the first in order among the conditions to be feared; second in order is paralysis of the brain; and third in the category come disturbances in other organs. The physician's task is to prevent the dangerous consequences of an elevated temperature, and to treat the fever before these consequences have ensued. It is a poor excuse for the physician, whose patient dies during the third week of typhoid fever from sudden paralysis of the heart, to justify his hitherto expectant treatment with the declaration that, up to this time, no alarming symptoms had appeared, and no indications for active interference had been present. If he had observed and known the significance of the temperature, he would have foreseen the evil, and might have prevented it. The several methods by which we are enabled to lower the abnormal temperature, are grouped together under the name of *antipyretic treatment*. Included under this term are the direct cooling of the body by the energetic withdrawal of its heat, and the various dietetic and medicinal regulations and prescriptions whereby the production of heat can be limited. The first result is accomplished

by means of what is known as the cold-water treatment, which was first systematised and used in febrile affections, according to certain clear indications by James Currie, during the last decade of the eighteenth century. His method, which consisted in cold affusions frequently repeated, was especially employed in typhoid fever, but gradually fell into disuse. The writings of E. Brand, in Stettin, "On the Hydrotherapy of Typhoid Fever," which appeared in 1861, gave the first stimulus to the energetic pioneer-work of such men as Bartels and Jürgensen. From the work of Jürgensen it appeared that if the withdrawal of heat from the body was to be followed by any marked results, it must be repeated as often as the temperature of the body rose above a certain point; and also that patients endured this repeated withdrawal of heat without experiencing any bad effect. It is, as a matter of course, entirely immaterial in what way the abstraction of heat is accomplished, provided that a sufficient amount of caloric is actually withdrawn from the body. On the whole those means will be found preferable which achieve the desired result with the least inconvenience to the patient. *Cold affusions* have much less effect, according to direct calorimetric observations, than baths of the same temperature and duration, but they are much pleasanter to the patient. *Cold sponging*, even with ice-water, seems to have but a very slight cooling power, though it may be made of some effect by frequent repetition. *Local abstractions of heat*, as by cold compresses, ice-bags, &c., have no influence to speak of on the general heat of the body. But the local effect of ice-bags is often of great consequence, inasmuch as by their long-continued application over the region of the heart, or on the head, we may accomplish a local lowering of heat to a certain depth, and thus protect these organs, to some degree, from the disturbing influences of fever. By means of *cold drinks*, the swallowing of ice, cold injections, &c., the temperature of the body is lowered to about the extent of the warmth required to melt and warm these articles themselves. The effect of such abstraction of heat, though not very great, still has this advantage—that no such compensatory increase in the production of heat follows these internal means as there does the cooling of the external surface. A frequent repetition of cold drinks, &c., so far as it is not burdensome to the patient, is, therefore, earnestly to be recommended.

As a rule, in somewhat severe cases, Professor Liebermeister has the temperature taken every two hours, day and night. Whenever the temperature in the rectum reaches 103°, or in the axilla 102·2°,

a cold bath is given. As a matter of course, however, individual peculiarities must be taken into consideration. In children, or in persons whom one has reason to suppose capable of great resistance to the influence of heat, the temperature which calls for the bath may be placed higher, say at 104° in the rectum, or 103° in the axilla. Above all things it is important for the physician to free himself from the delusion that anything essential can be accomplished by one bath or by a few baths. If the disease is obstinate, the interior of the body is but very little cooled down by a single bath, and that for but a very short time. For adult patients the full-length cold bath of 68° Fah., or lower, is to be preferred. The same water can be used for several successive baths for the same patient; the bath-tub remains standing full, and the water, representing about the temperature of the room, answers the purpose, without change. The duration of the bath should be about ten minutes, if prolonged much beyond that it becomes unpleasant to the patient, and may even prove a damage to him. If feeble persons are much affected by the bath, remaining cold and collapsed for a long time, the duration should be reduced to seven, or even to five minutes. Immediately after the bath the patient should have rest; he is, therefore, to be wrapped up in a sheet and put to bed (which may with advantage be warmed, especially at the foot), lightly covered, and given a glass of wine. In dealing with very feeble patients, one may begin with baths of a higher temperature, say 75° , although, of course, these will produce less effect. In very severe cases it is necessary to repeat the baths every two hours, so that twelve baths are given every twenty-four hours. In some instances that have occurred in the hospital at Basle, the number of baths required by a patient during his entire illness has exceeded two hundred! These were, certainly, obstinate attacks, in which the intense fever would undoubtedly have caused death had any less energetic means been adopted. In the majority of instances, especially if antipyretic drugs are administered at the same time, four to eight baths per diem will be found sufficient, with forty to sixty in the aggregate. The majority of patients find the cold baths decidedly disagreeable, no little persuasion and some authority on the part of the physician being required to induce them to submit thereto as often as it is necessary. But even in private practice the patients and their friends are soon convinced of the benefits derived from this method, and there is then no further opposition to its use. In the later stages of the disease, when there

was no such fever present as positively to demand the measure, patients have often begged for permission to take a cold bath, because they still feel uncomfortably warm. *Hæmorrhage from the bowels* constitutes one of the *contra-indications* to the use of cold baths. It is possible that the determination of blood to the internal organs, caused by the abstraction of heat, may increase the tendency to hæmorrhage; and, at all events, the moving of the body, be it active or passive, connected with the taking of a bath, is injurious. The same thing, of course, holds true to a still greater degree, in case of *perforation of the bowels*. *Menstruation* is not to be considered as a contra-indication, except when there is no danger in the case; if the fever is considerable, and does not readily yield to other means, the baths are continued. Pneumonia, hypostatic congestion, and the like, offer no reason for suspending the baths; the hypostatic troubles sometimes disappear under their use. An important contra-indication, however, is found in the existence of a high degree of *weakness of the heart's action*. When the force of the circulation is so reduced that the surface of the body is cold while the interior is very hot, there is no hope whatever that a further cooling of the surface will make any difference to the interior; it is much more to be feared that by such means the peripheral circulation would be still more obstructed. In some cases the extreme obstinacy of the fever, which occasionally resists the most systematic use of baths, and, furthermore, the circumstance that some patients cannot bear a sufficiently frequent repetition of them, or that contra-indications to their use may exist, combine to necessitate the employment of other means which may aid in lowering the temperature of the body. Amongst the medicines having this effect the most prominent are *quinine*, *digitalis*, and *veratrum*.

In reference to the comparative efficacy of cold baths and quinine, Professor Liebermeister says the fact is that, notwithstanding the high estimate that he places upon the cold-water treatment, and his positive conviction that it would be wrong to treat a severe case of typhoid fever without the systematic abstraction of heat (unless there were complications present that forbade it), yet if he were forced to the unpleasant alternative of adopting only one or the other of these two means—cold water or quinine—he should, in the majority of cases, choose the latter. The well-known fact that a high fever, which prevents complete periodical intermissions, is less dangerous than a milder fever which is continuous, or shows only light remissions, must lead us, in the use of antipyretic remedies,

also to strive for the production of as complete an intermission as possible. He does not consider the effect of a dose of quinine as entirely satisfactory unless it reduces the temperature to nearly the normal standard, that is, to 100.5° in the rectum. If this is not done by the first dose he increases the next one. If, on the contrary, the first dose reduces the warmth to 98.5° , or below—a not very uncommon occurrence—then the next dose is diminished. It must also be remembered that the same dose will effect a greater fall of temperature later in the disease than it will in the second week. Such a complete intermission will be brought about most readily if the dose of quinine is given at nightfall, so that the morning remission and the effect of the quinine will come together. It is also better for the patient than if the dose were given in the morning, as, in the latter case, it might modify the exacerbation of fever, but could not bring about a complete intermission. During that period of the disease when the fever already spontaneously manifests a tendency to strong remissions, or even to complete intermissions, quinine is much less indicated than during the continuous or sub-continuous stage. Its favourable effect depends chiefly on its power to produce a temporary intermission of fever; where such already exists, this precise indication is no longer present. And the power of the drug to control passing exacerbations of fever is much less certain. To adults, Professor Liebermeister usually gives from 22 to 45 grains of the sulphate or the muriate of quinine. He finds the action of the two salts in equal doses to be alike. *This dose must positively be taken within the space of half an hour, or, at the most, an hour.* He usually lets them take a powder of $7\frac{1}{2}$ grains every ten minutes until the desired amount is taken. Sometimes it is preferable to administer the salt in solution, with an acid, but he has found it just as effective when given in powder. It is useless to expect the full benefit of this dose to appear, if the dose is divided and its administration extended over a longer time. Quinine is expelled from the body rather rapidly in the urine; and so, in the administration of broken doses, there is never a time when a sufficient amount of it is brought to bear at once. Even if one gives a much larger amount of it, distributed over half a day or a day, there is often hardly any effect perceptible on the temperature of the body. On the other hand, he never allows the dose to be repeated in less than 24 hours, and, as a rule, does not give it again under two days.

A full dose of quinine, such as is spoken of above, usually pro-

duces a loud ringing or roaring in the ears, and partial deafness; if these conditions were present before, they are greatly aggravated. Very large doses may even bring about a state similar to that of drunkenness, with unsteadiness of motion, weakness and trembling in the extremities, and a decided feeling of discomfort. These last manifestations are less frequent with sick than with well subjects. The temperature of the body falls materially, sometimes to the normal standard, and soon afterwards the frequency of the pulse diminishes, and all the other disturbances dependent on the increase of heat are modified. The decline of temperature usually begins a few hours after taking the medicine, and the minimum is reached from 6 to 12 hours after; then it begins gradually to rise again, but usually remains somewhat lower than before, even as late as the second day. There are still, observes Professor Liebermeister, a good many physicians who have a sort of dread of these large doses of quinine. Where a dose of 30 grains is indicated, they give 15, and then try to make good the deficiency by repeating it oftener—say every day or twice a day. No sufficient and satisfactory result need be looked for from such a method. He has given quinine in large doses to at least 1,500 typhoid fever patients, besides hundreds of patients with pneumonia and other diseases. The number of single doses, of 1 scruple to 45 grains, which he has ordered in hospital and private practice, probably amounts to 10,000, and in no single case has he seen any permanent injury follow which could justly be attributed to the action of the quinine. Some other physicians, as for instance, Jürgensen, have even exceeded the dose of 45 grains, which has hitherto been Professor Liebermeister's maximum, without observing any bad effects. Of course the use of quinine in large doses, like the use of any other powerful agent, demands care and circumspection. If one is not sufficiently familiar with the individuality of the patient and the disease, and if there is no immediate danger impending, it is well to begin with a small dose—say 20 grains; if this proves insufficient it must be increased next time. Quinine has often been declared to be ineffective, because the temperature of the patient, although reduced for a while, soon rises nearly to its former height. Such an objection is appropriate only for him who either expects a specific effect from the drug, or supposes it can work miracles. A great advantage belonging to the use of quinine is that it obviates the necessity for the so frequent use of cold baths; and with the patients who object strongly to the baths, it is worth a

great deal to be able to omit them for a whole day sometimes, and to discontinue them altogether at an earlier period. If, on account of intestinal hæmorrhage, or for any other reason, baths have to be stopped, the quinine can usually be continued. In hæmorrhage from the bowels, Prof. Liebermeister is in the habit of giving quinine in solution with tincture of opium. Finally, quinine is sometimes very manifestly the means of saving life in patients who already have a high degree of cardiac weakness, and in whom the baths are therefore contra-indicated, or are no longer effective. He has repeatedly seen patients recover, as the result of a quinine remission, the frequency of whose pulse was already excessive, and the surface of the body cool. The subsequent course of the disease in some of these showed that the fever was not particularly obstinate, and that life was thus desperately endangered only because nothing had been done to combat the fever. The great repugnance of some patients to this drug, and the fact that its administration by the mouth is sometimes followed by vomiting, makes some other method of applying the remedy at times desirable. Experiments with the hypodermic injection of quinine have proved that the small doses, which alone can be administered that way, produce but a very slight effect. The best substitute for the ordinary method is to give quinine injections into the rectum, with the addition of a little tincture of opium. Given in this way the drug exerts an influence almost as promptly as when taken into the stomach. Quinine produces equally good results in children as in adults. In order to secure satisfactory antipyretic results, it is necessary, according to Hagenbach, to administer large doses, as follows:—For children under two years old, 10 to 15 grains; for those between the ages of three and five, 15 grains; for those between six and ten years of age, 15 to 23 grains; and for those between eleven and fifteen years of age, 23 to 31 grains. Under the use of smaller doses the effects are often unnoticeable or doubtful; and Hagenbach, as the result of his experience, is inclined rather to increase than to diminish the doses.

In the vast majority of cases the antipyretic effect desired can be fully attained by the use of cold baths, and quinine in suitable doses. But occasionally the fever is of such obstinacy that additional antipyretic medication has to be employed. The use of *digitalis* was first especially advocated by Wunderlich, and afterwards adopted by Thomas, Ferber, and others. When employing *digitalis* for its antipyretic effect, Prof. Liebermeister always uses

it in substance—that is, in powder or in pills, as this form is far more reliable than an infusion. The entire dose is much smaller when given in substance than when the less effective infusion is used. He usually gives from 11 to 22 grains, extended over a period of about thirty-six hours. In particularly severe and obstinate cases, where a sufficient lowering of temperature cannot be attained by quinine alone, this can usually be accomplished by the combined use of quinine and digitalis. The above-named dose of digitalis should be given gradually during twenty-four or thirty-six hours, and should be followed by a full dose (30 to 45 grains) of quinine. If one has succeeded in producing a complete intermission in this way, it will probably be practicable to accomplish the same end again by means of quinine alone. Digitalis is only to be used in those cases of typhoid fever in which there is no considerable degree of cardiac weakness, where the pulse is not yet extremely frequent, or, at least, is still pretty strong. The rule for its application is just the opposite to what it is in disease of the heart—in typhoid fever the more frequent the pulse the less is digitalis indicated. The impending paralysis of the heart is not prevented by the use of this drug, but seems rather to be favoured thereby. No special harm is done, in patients with powerful action of the heart, if the administration of a large dose causes nausea and vomiting; of course the medicine must then be stopped.

Wherever the antipyretic treatment of typhoid fever has been carried out with proper system, it has yielded most uncommonly good results. In the hospital at Kiel, under Jürgensen, the mortality among typhoid-fever patients has been reduced from $15\frac{4}{10}$ per cent. to $3\frac{1}{10}$ per cent.; and in the hospital at Basle, under Liebermeister, a mortality of 27 per cent., under indifferent, expectant, or symptomatic treatment; and of 16 per cent., under incomplete antipyretic treatment, stands opposed to a mortality of 8 per cent., under systematic antipyretic treatment.

In his observations on the Treatment of Incidents, Complications, and Sequelæ, and on Dietetic Treatment, Prof. Liebermeister does not advance any suggestions unknown in this country, where the practical management of this disease has been so long and so carefully studied by those who have had large opportunities for doing so.

In the essay on "Typhus Fever," Prof. Lebert observes the treatment of the patient, independent of complications, is, at the best, expectant, as in typhoid fever and acute diseases generally; and he

insists more than once upon the most careful and thorough ventilation, for cold is much less to be feared than bad air. Quiet is to be maintained. As the nursing is exhaustive, experienced nurses should be obtained. Cool drinks in abundance, water, lemonade, carbonic acid water, particularly that which has been made with distilled water; and every three hours he gives milk, broth, or small quantities of weak soup. Cold sponging is rather pleasant than useful. Cold baths, at about 65° Fahr., may be repeated day and night, as often as the temperature rises above 102°·2 Fahr.; these are not only well borne, but meet with no opposition from the patient as soon as a few have been taken. Great relief is thus obtained in the severe cases with high fever, and a more favourable result is induced; the patients sleep better, and the thoracic and intestinal symptoms are usually not aggravated. At the same time the question of the general utility of cold baths in *typhus fever* cannot be decided, owing to insufficient material. Lebert thinks it probable, from the decidedly favourable results of cold baths in typhoid fever, that this method will become universally adopted in typhus fever. Cold baths, or bags of ice applied to the head, are useful in headache. Drugs, as such, he considers unnecessary, but gives them chiefly to satisfy the patients and their friends. He is in the habit of prescribing the dilute phosphoric acid, from a drachm to a drachm and a half, mixed in four ounces of water, and one ounce of raspberry syrup, of which mixture a tablespoonful is to be taken every two hours. Cold-water injections readily relieve constipation. Where the strength rapidly fails, stimulants and excitants are to be earlier employed, and more freely than in typhoid fever. Best of all is good old wine, to be given three or four times daily in doses of one or several tablespoonfuls. Ethereal mixtures—ammonium carbonate, water of ammonia, with alcohol and oil of anise, camphor, musk, in substance or tincture, are to be used as in typhoid fever. Where there is extreme restlessness, a warm bath often proves efficacious, either alone or followed by a cold douche. Large doses of quinine—15 to 30 grains—are to be employed only when the fever is very intense, and cold baths cannot be used. Where the thoracic symptoms are marked, an infusion of ipecacuanha with water of ammonia, alcohol, and oil of anise may be given. Small doses of opium or morphine may be prescribed for the exhausting wakefulness during convalescence. When the improvement has fairly begun, a more nourishing diet should gradually be obtained, but care should be taken against any

loading of the stomach, or error in diet. It must also be seen to that the patients do not return to their employment or work before their strength is thoroughly restored.

The elaborate article, by Prof. Lebert, on Cholera Europæa and Asiatica, is well worthy of attentive study, and will be noticed in a subsequent number of the Journal.

ARTHUR WYNNE FOOT.

On Diseases of the Skin, including the Exanthemata. By FERDINAND HEBRA, M.D., and MORIZ KAPOSI, M.D. Vol. IV. Translated and edited by WARREN TAY, F.R.C.S. The New Sydenham Society, London. 1875. Pp. 247.

THE fourth volume, which is wholly written by Kaposi, is occupied with the consideration of the remaining classes of new growths. The first chapter is devoted to a peculiar nodular disease of the nose, termed rhinoscleroma, which was described for the first time in 1870 by Hebra and Kaposi, and although up to this date these authors have seen in all fifteen cases, we are not aware that the disease has yet been recognised by English writers. Considerable difficulty accompanies its diagnosis from syphilitic nodules, keloid, and epithelioma, and the only plans of treatment attended with success are excision and the destruction of the new growth by means of caustics.

The article on lupus is very full, and the discussion of the principles and methods of treatment is carefully and elaborately worked out. For various reasons, nitrate of silver in stick is regarded as the remedy *par excellence* in the treatment of lupus, and we fancy that it does not require a wide experience to endorse the aptness of the following remarks:—

“In truth, the treatment of lupus is by no means easy. A mere mnemonical acquaintance with the numerous remedies and plans of treatment enumerated is not sufficient to enable us to cope with so obstinate a malady. A physician must have a large experience, and exercise professional and natural judgment, in order to be able to choose the right remedy at the right moment, and to proceed cautiously at one time, and act energetically at another.”

PART III.

HALF-YEARLY REPORTS.

REPORT ON PUBLIC HEALTH.*

By CHARLES A. CAMERON, Ph.D., M.D., F.R.C.S.I.,
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Royal College of Surgeons, Ireland; Medical Officer of Health
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SANITARY ANALYSIS OF WATER.

SINCE the passing of the recent Public Health Acts for England and Ireland, greatly increased attention has been given to the subject of water-supplies of towns, and even of rural districts. There appears to be a general desire amongst medical officers of health to have the various sources of water within their districts examined, and the quality of the liquid tested by analysis. We venture to assert that for the one analysis of water made—say five years ago—there are now, at least, a dozen performed. In very few cases are the examinations of water conducted by the medical officer himself; he merely recommends that his sanitary authority—rural or urban, as the case may be—should submit the waters used by the public to the scrutiny of an analytical chemist. After some time, however, the majority of health officers will be competent to perform the work themselves, and will do so; provided, of course, that their salaries are more liberal than their present inadequate stipends. Some years ago very few physicians examined urine for albumen, sugar, oxalates, urates, &c., the aid of the chemist being called upon when an examination of urine was considered desirable. At present it is rarely that the chemist is asked to examine urine, except, perhaps, to determine the amount of sugar, or urea, contained in it, for there are few physicians who are incompetent to discover the more important alternations in this excretion produced by disease.

* The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of this Journal.

As water analysis was formerly performed, it was, indeed, difficult for anyone, save a chemist, to do the work, and if the modern process suggested, and still carried out by Frankland and Armstrong, were to be used generally, few medical officers of health, however highly educated, could adopt it, for want of the expensive apparatus necessary to that troublesome method. Thanks to Nessler, Wanklyn, Chapman, and Smith, we have a process for the partial analysis of water, which is by no means difficult to learn, and which does not necessitate the use of costly appliances. We propose to describe the modification of this process, which we consider suitable to the wants of health officers; but first let us consider what is necessary to be done in a sanitary analysis of water.

Potable water is unfit for use—1stly, when it contains excessive quantities of mineral matter; 2ndly, when it includes large amounts of vegetable substances; 3rdly, when it is tainted with sewage. From 4 to 20 grains of solids are about the right quantities in water; from 20 to 50 grains may be tolerated, but these amounts are undesirable; whilst the presence of still larger quantities is highly objectionable. It is not often that water in these countries contains quantities of vegetable matter likely to prove injurious to health. In some districts the well-waters contain from 5 to 10 grains of peaty matters per gallon. In a specimen of water from Castledaly, County Galway, we found, per imperial gallon (70,000 grains weight), the following:—

	Grs.
Mineral matter,	7.05
Organic and volatile (nearly altogether peaty) matters,	18.80
	<hr/>
Total Solids,	25.85

This water was, of course, unfit for use. The most dangerous impurity of water is sewage. In fresh sewage, and in the water contaminated by it, there is a large amount of combined nitrogen, in the form of albuminoid bodies, and the proximate products of their decay—kreatine, kreatinine, &c. These bodies constitute the most serious impurities of water, and the nitrogen present in them is termed, in the statement of water analyses, *albuminoid*, or *organic nitrogen*. After some time the albuminoid bodies undergo further decomposition, and their nitrogen becomes ammonia. Later on the ammonia is oxidised into nitrous acid and water, and finally

its nitrogen becomes a constituent of nitric acid. Ammonia, nitrous acid, and nitric acid, are harmless ingredients of water; still their presence therein is regarded with suspicion, on account of their assumed origin. In a former Report we have shown that nitrates are frequently to be found as a constant ingredient of certain hard waters which are perfectly free from sewage impurities, and that it is only in soft waters that their presence clearly indicates that the source of the water is tainted. Ammonia in excess may nearly always be regarded as an evidence of a close source of impurity, and albuminoid nitrogen, when it exceeds a very minute proportion, must be looked upon as rendering the water unfit for use.

The quantity of albuminoid ammonia which renders a water unusable is put down as 0.15 part per million parts of water. We consider water to be undrinkable when the albuminoid nitrogen is more than 0.009 grain per imperial gallon. If there be much ammonia, and that the albuminoid nitrogen is more than 100th part of a grain per gallon, the water may be looked upon as very impure. The amount of water to be used in examining for ammonia and albuminoid nitrogen is, according to Wanklyn, half a litre (nearly 16 ozs.), and several testings of the distillate are prescribed. We find, however, that one third of that quantity of water will suffice, and that two testings of the distillate will be sufficient. The following process we recommend for adoption by health officers with a limited supply of apparatus, a small laboratory, and but little spare time for analytical work:—

Take 5 ozs. of water, add to it a few grains of recently ignited carbonate of soda, place in a tubulated and stoppered retort, connect the latter with a Liebig's condenser, and distill 2 ozs. Stop the distillation, and remove the distillate. After a few minutes pour through the tubulure of the retort $\frac{1}{2}$ oz. of solution of caustic potash and permanganate of potash, resume the distillation, and take over $1\frac{1}{2}$ ozs. The first distillate contains the free ammonia, the second the albuminoid ammonia. Make up each to $2\frac{1}{2}$ ozs. with distilled water, and place 2 ozs. of each diluted liquid in a clear white glass cylinder or test tube; add to each 40 drops of Nesaler's solution; agitate, and after the expiration of ten minutes note the colour. If it be a faint straw colour the water is good; if it be of a deep yellow or brown hue, the water is bad. The quantity of ammonia in the water under examination is, of course, only half that in the distillate. The same remark applies to the

organic nitrogen. The actual amount of ammonia contained in each cylinder is to be ascertained as follows:—Dissolve 1 grain of sulphate of ammonia in 1 gallon of distilled water, which then will contain 0.25 grain of ammonia. Dilute 1 pint with 9 pints of water, the diluted solution will then contain 0.025 grain of ammonia per gallon. Note the colour which 2 ozs. of this solution gives with 40 drops of Nessler's solution, and the colour which a mixture of equal parts of it and distilled water (containing consequently 0.0125 grain of ammonia per gallon). Provided with solutions containing 0.25 and 0.025 grain of ammonia per gallon, it is easy to make with either, mixed with distilled water, a solution which will give the same colour with Nessler's solution as a specimen of water under examination. In this simple way the exact amount of ammonia in water may be determined.

The carbonate of soda is added for the purpose of aiding in expelling the ammonia from the water. The permanganate and potash solution decomposes the organic matter in the water, and converts its nitrogen into ammonia, 14 parts of the former being equal to 17 parts of the latter.

Nessler's solution may be made as follows:—Dissolve 7 drachms of iodide of potassium in 6 ozs. of water, and add to the solution a strong solution of corrosive sublimate, until the red iodide of mercury, which at first appears, and then dissolves by agitation, at length forms a very slight permanent precipitate. Next dissolve $3\frac{1}{4}$ ozs. of caustic potash in 6 ozs. of water, add to the solution already made, and make up the whole to 20 ozs. Let the solution stand for an hour, to deposit a sediment, and decant the clear solution into stoppered bottles. The potash and permanganate solution is made by dissolving $6\frac{1}{4}$ ozs. of caustic potash, and 1 drachm of permanganate of potash in 40 ozs. water, which is to be boiled down to 35 ozs. Wanklyn directs the retort to be thrust down into the naked flame; we prefer a rose-burner, the flame of which does not quite touch the bottom of the retort.

The retort, condenser, cylinders, and everything connected with the process, must be frequently washed with water immediately before being used, as ammonia is usually found on the surface of vessels, especially in a laboratory.

The amount of solids in water is determined by evaporating in a platinum or porcelain dish one or more ounces, according to the delicacy of the balance at the operator's disposal. The dish may be placed upon a saucepan or beaker of water, heated by a Bunsen's

gas-burner, or a spirit-lamp. A balance capable of turning with the 50th part of a grain may, together with a set of weights, be purchased for £3 or £4. We trust that the foregoing instructions may prove useful to some of our readers who may be anxious to examine waters. The terms used and the weights and measures referred to are those with which the great majority of our readers are probably most familiar, for it is only very recently that the metric system of weights and measures, and the new chemical nomenclature have come to be used in the medical schools of these countries. The directions for the analysis of water, according to the recent methods, are invariably given on the supposition that every one is possessed of, and understands, the metrical system of weighing and measuring.

PURE WATER.

The quality of the water used, in many, if not the majority, of towns in the United Kingdom is notoriously very bad. In some of the Irish towns—such as, for example, Waterford—it is simply diluted sewage. In the manufacturing districts of England the want of pure water is greatly felt. The density of population there is so great, and the number of factories is so large, that it is next to an impossibility to prevent rivers and wells from being polluted, unless measures of a comprehensive character be adopted. There is now before Parliament a stringent measure for the prevention of river-pollution; and the existing Public Health Acts of 1872 and 1874 prohibit sanitary authorities and all others from terminating their sewers in water-courses. There are, however, great difficulties in the way of disposing of sewage. It must either be collected and purified by passage through clay, after, in some cases, treatment by chemical agents, or it must be discharged, by a continuous series of pipes, from the most inland parts of the country to the sea. In Ireland it may be found practicable to deodorise and nearly purify sewage before it enters rivers; but in such parts of England as Lancashire, Yorkshire, Staffordshire, and Warwickshire, it might, perhaps, be found the cheapest plan to allow the rivers to remain as they have always been, the great natural drains, or main sewers, of the country, and to procure supplies of pure water from a distant source. For example, the cost of bringing water from the mountain lakes of Wales, or from the Cumberland Meres, to London, would not be relatively greater than the expenditure necessitated by bringing the Vartry water to Dublin. The mountains, the drainage of which supply Lake Vartry, are about

twenty-three miles from Dublin, and the population of that city is slightly over 300,000. London is situated at a distance from the Welsh lakes about eleven times greater than Dublin is from Lake Vartry, and the population of London is just eleven times greater than that of Dublin. But whilst there are no large towns to be supplied by the Vartry *en route* to Dublin, there are almost innumerable large towns between Wales and London which would be glad to receive pure water from the subterranean river flowing towards the great metropolis. Indeed, all the towns fifty miles on each side of the aqueduct might be supplied from it. We have a strong conviction that before costly plans for sewage defecation and disposal are adopted, it would be desirable to secure supplies of pure water for not only towns, but villages, from upland lakes and rivers, which are known to be untainted. There should also be systematic examinations of the water supplied to towns by private companies, for very frequently the water is not properly filtered. Some time ago we examined the pipe-water of Limerick, and found it foul, evidently from inattention to the filtering beds. On attention being directed to the matter, the quality of the water became greatly improved, owing, no doubt, to its being properly filtered. In a recent Report by Dr. Sedgwick Saunders, Medical Officer of Health for the City of London, that gentleman stated that zymotic diseases were rarely absent from those courts in which the water was defective in quality and deficient in quantity. Dr. M'Cormac, late in March, reports that in Lambeth (for which district he is medical officer of health) zymotic disease was very prevalent during the month, and that the quality of the pipe-water supplied to the district was very bad. The *Midland Counties (England) Express* for March 20th, 1875, reports that Dr. Ballard, a well-known sanitarian, stated, in reference to an outbreak of scarlatina at Wood Sutton, that a brook at the back of some of the houses was unquestionably the cause of the spread of the disease. All the cases occurred amongst persons who drank this water, whilst not one occurred amongst those who were supplied by the water furnished from the South Staffordshire Water-works. There have been instances of the conveyance of scarlet fever through the medium of milk, but this is the first well-authenticated case of the spread of the disease by means of water. We have ourselves recently examined the water used in a large Orphanage in Cavan, and in which there have been two outbreaks of scarlatina. We found the water to be highly polluted, and utterly unfit for use.

The influence of an improved water supply upon the health of a community has been strikingly demonstrated by the case of Glasgow. Dr. William J. Gairdner, ex-Medical Officer of Health for Glasgow, was examined last year before a Committee of the House of Commons on the Birmingham Corporation Water-works Bill. He stated that during the five years which preceded the introduction of Loch Katrine water (which contains only 2 grains of solid matter per imperial gallon of 70,000 grains weight), the death-rate from diarrhoea in Glasgow was in the ratio of 149 per 100,000 living, whilst since the pure water had come to be used the deaths from diarrhoea and dysentery had fallen to an average of 59 per 100,000. In Glasgow the pump and other water used before the introduction of Loch Katrine was generally very impure.

THE SALE OF FOOD AND DRUGS BILL.

The Acts in relation to the adulteration of food, passed in 1860 and 1872, are proposed to be repealed by the Sale of Food and Drugs Bill, now before Parliament. As this Bill has been introduced by the Government, and has passed the House of Commons, and has been read a second time and passed through Committee by the House of Lords, without in the latter branch of the Legislature undergoing any amendments, it will probably become an Act ere our remarks upon it are read. This Bill is the result of the sittings of the Select Committee of the House of Commons, who sat last year to consider the working of the Act of 1872, and that Committee was the result of an organised agitation of wholesale dealers, especially in the tea trade, who considered themselves aggrieved by that application of the Acts relating to adulterations. In some respects the new measure is an improvement upon the former enactments; in some particulars it is of a retrogressive character. We shall give a short account of the new measure. The objectionable feature of the Bill is, that in most cases where an adulterated article is sold, the purchaser must prove a knowledge of the adulteration on the part of the vendor. It will be often somewhat difficult to do this, even in the case of the wholesale dealer or manufacturer, but in that of the retailer it will be next to an impossibility. The Bill states that the retail dealer of an adulterated article shall not be punished if he produces a warranty from the wholesale dealer, testifying to the purity of the article. Supposing that the wholesale dealer has really sold a genuine article, and that the retailer has adulterated it, the latter is to be allowed

to go off scot free if he produces the warranty. The Bill provides that the forging of a warranty is a penal offence, but there would be no occasion to forge it under any circumstances. If the retailer adulterated the article he would have got it pure, and a warranty to that effect from the manufacturer, or wholesale dealer; whilst, if he bought a spurious article, he would have no difficulty in getting the person from whom he bought to warrant its purity. As a matter of fact, we know that it will, in the great majority of cases, be impossible to punish the retailer for selling spurious articles. If he be inclined to be dishonest he can adulterate articles procured from other persons, and escape by producing the warranty which he got with the genuine article. He will take care, too, that the person from whom he has bought the article does not reside in the same town; but, indeed, even if he did, the Bill does not enable the wholesale dealer to be proceeded against in a case where his goods have been sold by a retailer, and found sophisticated. So far as our experience goes, the old Act worked well with respect to the prosecution of those who sold impure articles. It assumed that the person who sold articles should alone be held responsible for their genuineness. A few instances of hardship may have occurred in the case of retailers, but as a rule the retailer could always have proceeded against the wholesale dealer, and recovered the loss which he sustained by selling the fraudulently made-up goods of the latter.

In the new Bill medical officers of health may, as well as the inferior sanitary officers, procure and submit articles of food and drugs to the public analyst for analysis. We hope that all the dispensary physicians in those districts in which there are analysts will be appointed inspectors under the proposed Act, when it is passed, so that they may, at least, see to the purity of the drugs which they prescribe, and which too frequently are far from being pure.

A new feature is the power given to inspectors to purchase articles for analysis compulsorily, under a penalty, if refused, of £10. We insisted upon this power being given to the inspectors when we were examined before the Committee on adulteration, and we are glad to see that our suggestion has been acted upon. In future milk and bakers' carts may be stopped in the street, and the goods in them compulsorily purchased by the food inspectors. Up to the present there was no good method of dealing with the adulterated milk dispensed from house to house from the milk carts. Under the new measure notice must be given by the inspector that

the article purchased is to be submitted to the analyst, and the purchased specimen is to be divided into three parts—one to be handed to vendor, one to be delivered to the analyst, and one to be retained by the inspector. This procedure will make the duty of collecting specimens of milk, for example, rather unpleasant to the inspector.

Under the old Act it was doubtful how the penalties imposed and recovered should be applied; in the new measure they are directed to be handed to the prosecutor, if an inspector, to be by him paid over to the local authorities under whom he acts. There will in Ireland be difficulty as to who the local authorities are. In the counties the appointing authorities are the grand juries, but the persons who can be by them appointed are sanitary and market officers in the employment of Board of Guardians and Towns Commissioners. To which local authority should the penalties be handed over when received by the inspector?

Mixed articles of food may be sold, but only under a term which implies that they are mixed. The abstraction of cream from milk, or soluble matters from tea, &c., is defined to be equivalent to the addition of foreign and unnecessary substances to food. Clause 20 enables the defendant or his wife to tender themselves for examination; and clause 21 enables Justices before whom cases are being tried to order a further analysis of the alleged adulterated article to be made in the laboratory of the Board of Inland Revenue, Somerset House. To this clause the public analysts of the United Kingdom strongly object, on what appears to be a sufficient ground—namely, that no one knows who the chemists in the Somerset House laboratory are.

[To be concluded in the next Number.]

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

President—CHARLES D. PURDON, M.A., M.B.

Honorary Secretary—J. J. CHARLES, M.A., M.D.

Notes of Pathological Cases. By J. J. CHARLES, M.A., M.D., M.Ch.

DR. CHARLES exhibited several interesting specimens which he obtained from the Queen's College Anatomical Rooms:—

1. *Gangrene of the Lung.*—The disease in this specimen was confined to the lower lobe of the left lung. In it there was a cavity large enough to contain a body four inches in diameter; and suspended in its interior, in a sanious liquid, was a shreddy, tinder-like substance, of a dark greenish colour, and of a sour, unpleasant odour. On examination the gangrenous mass was shown to consist chiefly of the elastic fibres of the lung. The wall of the cavity was thick, firm, and composed of white fibrous tissue, which formed an efficient boundary for the diseased structures, and separated them entirely from the comparatively healthy lung around. Pneumonia and extensive pleuritis existed on both sides of the chest.

History.—T. R., forty-four years of age, and of a broken-down constitution. On admission into hospital November 5, 1874, he complained of a slight cough, with dark sputa. The signs and symptoms of pneumonia increased in violence, and the sputa came to possess a foetid odour. His strength gradually gave way, notwithstanding the use of stimulants and the application of blisters. Death occurred after he had been eleven days in hospital.

2. *Extensive Calcification of the Mitral Valve of the Heart.*—In this specimen there was a ring of calcareous matter along the line of attachment of the mitral valve. For the most part the calcareous material was covered by endocardium, but in some places it formed sharp pro-

jections into the left ventricle. There was hypertrophy, with dilatation of both sides of the heart.

History.—J. M., aged sixty-five, received into hospital Oct. 3, 1874, in a weak state. His condition then was:—Face livid, with ascites and œdema of the limbs; considerable dyspnœa, but scarcely any cough; urine 1032, with some albumen and a large quantity of urates; systolic basic and apex murmurs. He seems to have derived only temporary relief from treatment, and he died sixteen days after admission into hospital.

3. *Dropsy of the Fallopian Tubes.*—This specimen was removed from the body of an unimpregnated female, who was forty years of age, and died from bilateral pneumonia.

The uterus was small (four inches by three), and the os would only admit a probe. The mucous membrane was congested near the entrance of the Fallopian tubes, and beneath it, about the middle of the posterior wall, was a fibrous tumour of the size of a pea. The cervix was long, and contained a colloid liquid. The arteries were larger and more tortuous on the right side than on the left.

The Fallopian Tubes.—Both tubes were distended at their distal extremities to form cyst-like tumours, which were filled with a thin colloid liquid. The inner and outer ends of the tubes were occluded, owing to a thickening and folding of the mucous membrane, probably from inflammation.

The right tube was seven inches long, and the cyst-like dilatation two inches long and one broad.

The left tube was five inches long, and more contracted at certain parts than the right, and its outer distended portion was three inches long and one inch and a half broad, and closely attached to the ovary.

The right ovary was nearly normal in size, but its glandular portion was pale and atrophied.

The left ovary almost normal.

History.—No history of any symptoms having been referred to the diseased organs could be discovered.

Remark.—In this case both Fallopian tubes were nearly equally affected. This, according to Graily Hewitt,^a is the rule.

4. *Fibrous Tumours of the Uterus, with Cysts of the Cervix Uteri.*—The uterus was taken from the body of a female who was sixty years of age, and died from “the decay of nature.” It was dragged down to the left side, so that the right Fallopian tube was half an inch higher than the left. This displacement was, no doubt, due to the adhesion of the left Fallopian tube to the lower part of the body of the uterus, as well as to

^a The Diseases of Women, p. 560. 1872.

the presence of a large tumour on the same side. The body of the uterus was thin, and five inches long. A fibrous tumour (intra-mural) occupied the fundus, and measured two inches from side to side, one inch from above downwards, and half an inch from before backwards. This growth was surrounded by a capsule of fibrous tissue, to which it was but loosely connected, at its lower and back part, by a very fine pedicle of blood-vessels and muscular tissue. Two other tumours (sub-mucous), of the size of peas, lay on the left side of the fundus, near the entrance of the Fallopian tube. In the Broad ligament, one inch to the right of the uterus and above the Fallopian tube, there was another tumour (sub-peritoneal), as large as an almond; and in the left half of this ligament, near the rectum, was a fifth, which was attached to the lower part of the body of the uterus by a long pedicle, and was of the size of a large walnut. Lastly, on the left side of the lower half of the body of the uterus were two more small (intra-mural) tumours. In all there were at least seven tumours—two peri-uterine, or sub-peritoneal, three intra-mural, and two sub-mucous. On section each of these presented almost the same structures, being made up principally of coarse bundles of muscular tissue, with connective tissue.

In the cervix uteri there were several mucous polypi containing a glairy fluid.

[The two specimens last described were exhibited during the session 1873-74.]

5. *Dissection of the parts in an old Dislocation of the Elbow.*—In the body of a strong muscular male, aged forty-four, both bones of the left forearm were dislocated backwards. The extremity affected was almost as well nourished as the other. The forearm could not be flexed to an angle less than 100°, but it could be abducted to a right angle. Adduction was much less extensive than abduction—the parts being made more tense in the former movement, but relaxed in the latter. The external condyle was on a lower level than the internal. The pronator radii teres, in addition to its normal origin from the internal condyloid ridge and internal condyle, was firmly attached, along with the common tendon of the flexor muscles, to the inner prominent edge of the trochlea, but that portion of it which lay between the condyloid ridge and the trochlea was quite pale and atrophied from disease, and very unlike the rest of the muscle. Its second head having taken origin, as usual, from the coronoid process, the muscle ran nearly horizontally to its insertion. The median nerve was much flattened, and the brachial artery somewhat contracted, where they lay over the prominence of the trochlea. Consequently the radial and ulnar arteries were not so large as in the other extremity. The brachialis anticus had contracted adhesions to the anterior surface of the trochlea and capitellum. The anterior ligament was entirely absent, except

below, where it was attached to the ulna and the lower surface of the trochlea and capitellum, but its place was taken above by the brachialis anticus. The triceps was normal; and the anconeus was adherent to the posterior surface of the orbicular ligament, which seemed to form the most important part of its origin. The posterior ligament had the usual connexions, and was made tense by a small degree of flexion. The internal and external lateral ligaments, as well as the orbicular, were almost normal. The internal condyle of the humerus was very prominent, whilst the external was almost entirely concealed. The coronoid process gave attachment to the usual muscles, but was displaced backwards and slightly outwards, so that its apex projected into the lowest part of the olecranon fossa. One or two small pieces, however, had been broken off the outer portion of this process, and were situate on the outside of the great sigmoid cavity. The large sigmoid cavity was occupied by a small quantity of adipose tissue, and the cartilage lining it was considerably altered. The head of the radius was somewhat enlarged, and retained its ordinary relations and connexions with the ulna, but was dislocated backwards and slightly outwards, so as to articulate with a cavity formed for its reception on the posterior surface of the humerus outside the olecranon fossa. Besides, the head of the radius articulated above with a strong process of new bone, which, being attached to the posterior aspect of the humerus outside the olecranon fossa, took the place of the capitellum and served as a *point d'appui* for the radius superiorly. There was also a smaller process of new bone on the back of the internal condyle to articulate with the inner part of the coronoid process.

It will be observed, then, that the radius and ulna were displaced farther upwards on the outside than on the inside. The force, therefore, which produced the luxation must have tended to abduct the forearm, and, at the same time, to drive the radius and ulna upwards—hence the obliquity of the lower end of the humerus.

History unknown; but as the man was frequently inebriated, it is believed he received the dislocation in a *mêlée*. The accident likely occurred from sixteen to twenty years before his death.

TRANSACTIONS OF THE CORK MEDICO-CHIRURGICAL SOCIETY.

President—DR. E. R. TOWNSEND, JUN.

Secretary—DR. RINGROSE ATKINS.

Case of Epithelial Cancer of the Hand, treated by Amputation of the Forearm. By S. O'SULLIVAN, M.D., Surgeon to St. Patrick's Hospital for Incurables; Assistant Surgeon, North Infirmary, Cork.

PATRICK HOOPER, aged seventy-four years, formerly a land-steward, was admitted into St. Patrick's Hospital on 16th October, 1874, under the care of S. O'Sullivan, M.D., surgeon to the hospital.

History.—He states that in his infancy he received a burn on the back of his right hand, which healed, leaving a well-marked cicatrix, which extends up the back of his forearm. About twelve months ago a dry crust began to form over the cicatrix on his hand. He picked off the crust, and then noticed that the skin beneath was soft, whitish, and moistened with fluid. He applied poultices to the sore. The ulcer gradually spread, running downwards between the index and forefingers, destroying the skin and tissues in the neighbouring parts, and rendering his hand quite useless. Palliatives having failed to check the disease, and a most offensive discharge and smell arising from the sore, he applied for admission to hospital.

Present symptoms.—He is a strong-looking old man, with a florid complexion. The heart's action is very intermittent. For the past ten years he has suffered from a chronic indolent ulcer of the leg. A small hard tubercle, with a black spot on its apex, exists under the axilla of the affected side. A similar tubercle exists under his left eyelid. There was no hereditary history of cancer ascertained about his case. No cancerous cachexia exists.

The ulcer on the back of the hand presents the appearance of epithelial cancer. It occupies nearly the one-third of the dorsal surface of his right hand.

After admission to hospital there was a very slight bleeding from the ulcer twice or three times. There was not much pain in the ulcer in the beginning, but latterly it has become somewhat painful.

The chief signs indicating the epithelial nature of the disease may be briefly stated, in accordance with Mr. Arnott's summary of cancerous affections, viz. :—

1. The age of the patient (74 years).

2. The fact of the lymphatic glands not being involved, although in a still later stage of the disease this might be expected.
3. Its infiltrating character.
4. The character of the pain attending it.
5. Its rate of growth, which might be considered rather slow, having existed over twelve months.
6. The absence of hæmorrhage to any extent which characterises medullary cancer (Moor).
7. The microscopic appearances.

The microscopic examination was made by Dr. Ringrose Atkins, who found, in sections taken from portions hardened in chromic acid and stained with "picro-carminate of ammonia," the aggregate of cells forming the so-called "concentric globes," or "birds' nests," well marked, the cells themselves being entirely of the "epithelial" type, presenting a withered appearance, and containing generally a shrunken nucleus.

In carcinoma, an almost invariable symptom is the early involvement of the lymphatic glands; the patient is younger, being usually from forty to fifty years; the pain in carcinoma is more severe from the first stage, and its growth is much more rapid. To this rule, however, there are exceptions. C. H. Wood, Surgeon to the Middlesex Hospital, observes that "it has been remarked that the epithelial is the only form of cancer in which the origin of the disease has been satisfactorily ascertained to be associated with a previous morbid state of its site. Instances are quite common in which it unexpectedly appears in parts which have been long subject to irritation or have been the seat of unhealthy and ineffectual attempts at repair." "Its chief primary site is the skin, especially near the mucous orifices. It is found in the tongue, in the os uteri, and in old scars, chronic ulcers and sinuses."

"Epithelial cancer is more favourable for operation than other forms of cancer, from the fact that after excision its return is more protracted; sometimes it remains for years without recurrence, and this does not usually take place in the scar. In its course and history it exhibits in the least degree the character of malignancy; sometimes not to be distinguished from the severe forms of lupus and rodent ulcer."

Treatment.—Carbolic oil poultices were applied to the hand. Ordered him a full nutritious diet. The fœtor was greatly lessened by the treatment, the ulcer itself looking cleaner; but no amendment took place in the disease, which continued to extend. On consultation with Drs. Shinkwin and Hobart, amputation of the forearm was considered to be the only treatment which could relieve his sufferings, and, probably, prolong his life, with any degree of comfort. On the 30th December, 1874, the patient having been put under the influence of chloroform, amputation of the forearm by the flap operation was performed, the dorsal flap being made from without inwards, and the palmar flap by

transfixion; the edges of the flaps were brought together by wire sutures, and the stump dressed with carbolic oil and carbolised gauze. The first dressing was made on the 3rd January; the ends of the bones were well covered; there was no retraction of the flaps; no hæmorrhage; slight suppuration; dressed stump every second day with carbolic acid dressing. The ligatures came away on the 21st January. There was in the interval some high inflammatory traumatic fever, which subsided under the use of stimulants and beef-tea, with a mixture of quinine and muriated tincture of iron.

23rd.—There is considerable sloughing of the tendons of the forearm, which come away in long strings. The stump is now about three-quarters healed; otherwise doing well.

3rd February.—There is much œdema of the arm and forearm; a long sinus extends up the forearm; made a counter opening in the under surface of the stump; applied linseed meal poultices.

6th.—There is free suppuration from the sinus.

10th.—The suppuration has nearly disappeared; the forearm feels much firmer. The incisions have healed up to within the size of a shilling; the arm is still œdematous; the health of the patient is good.

On Climacteric Change. By PROFESSOR O'CONNOR, M.D.

THE term "climacteric," as applied to certain periods of life at which sudden changes in health, either favourable or unfavourable, occur, without any assignable cause, is seldom found in medical writings at the present day. It is, perhaps, too much the custom to disregard the consideration of diseases not founded on known pathological changes, many of which are found in the old nosological works on medicine. We recognise disturbances in the system at the period of dentition and puberty, and at the cessation of menstruation, which test the stability of the constitution. Might we not expect, *a priori*, that the decline of life, like its development, may proceed, not at a uniform rate, but arrested or precipitated at certain stages, which are called climacteric? Sir Henry Hallford, and one or two other writers, have endeavoured, apparently in vain, to revive the consideration of this subject. No doubt, it is not so easy to observe with precision changes in the late period of life as in the early, owing to the many artificial disturbing elements in the course of life in the latter, when free-will gives free play to the passions, and care, grief, or anxiety, may obscure the milder action of natural changes, which is hard to eliminate from the more powerful agencies with which it is associated. Nevertheless, any physician in much practice must have seen many persons about the age of sixty-three, the great climacteric, falling away from health, without being able to find any assignable cause on the most careful inquiry. His friends notice a great change in

his appearance, and believe he is approaching his end; and soon after the same individual is seen in full vigour—regretting, perhaps, that in his previous despondency he had given up his business, or the practice of his profession, for which he now feels himself equal. A characteristic of this condition is a gloomy foreboding of poverty, without grounds, or extravagant grief carried beyond the ordinary bounds. If the patient be well guided, and if organic disease does not establish itself during the stage of debility, a reaction takes place, which establishes the health on a firm basis. Strange stories are told of white hair becoming again dark, of new sets of teeth springing up in old sockets, of sight so improved that spectacles are no longer needed. I will bring under the notice of the Society a few cases less striking than these asserted facts. A gentleman, very delicate all his life, had a considerable discharge of blood from his stomach, about sixty years of age, and continued many months apparently approaching his end. He rallied into health suddenly, and now, at the age of eighty-five, goes to mass at half-past seven o'clock every morning, and never uses spectacles when reading.

An old lady, who died only recently at the age of ninety, assured me she had very poor health till she had passed sixty years of age.

The following case I give in the words of the patient himself, a physician:—"When I was about sixty-three years of age I felt an unaccountable languor and a debility in walking. In ascending a hill, or going up stairs, the muscles of the thighs and legs were as painful as if they were in a state of inflammation. All candid people who met me said I was very much changed in my features; that I must have been ill; that I should eat more and work less. Though my sincere friends were more delicate in their remarks, I could see from their countenances that they had much anxiety about my condition. On rubbing my hand over my face I found it rough, as if grains of sand were embedded in it. My nights were miserable, being constantly visited by nightmares of a uniform character—always feeling myself in some exposed place, lying in a state of utter prostration, unable to move. These dreams, I believe, were produced by a weakness of the heart's action—a sort of fainting in sleep. I never have had similar since or before. In the month of November the tops of the fingers of one hand were slightly scorched handling a hot object. The charred cuticle was unremoved until the following June. The feet and hands were always cold. My voice became husky, not through a cold or inflammation, but nervous debility, and speaking or reading aloud distressed me much. I felt no symptom of illness, except a general languor, in which the pulse partook. The urine was normal. When I had been in this state several months I visited a medical friend in Dublin, being on my way to the Continent, not intending my visit to be professional. He expressed surprise at my changed appearance, and asked, with more frankness than was pleasant,

whether I had any hæmorrhage from the bowels, kidneys, or lungs; whether my legs were swelled; whether I had syncope. Being answered in the negative, and finding, on examination, my heart was weak, but not unsound, he said with some satisfaction, and, as the result proved, with truth, 'Then your disease is sixty-three.' Having spent a month on the Continent, not submitting to any efficient treatment, I soon became thoroughly well, with a degree of sound health which I did not enjoy for years previously. The roughness was removed from my face; the cuticle on my fingers was renewed; some scaly exudations on other parts of the body fell off; my voice was restored. It appeared to me as if the nutritive changes had ceased during the period I have referred to, and the tone of every bodily organ was temporarily depressed."

From the reaction towards perfect health which took place in this and similar cases, it is evident the early symptoms did not depend on any structural changes in the arterial system which arise in advanced life; still the lowered state of the vital power makes it a favourable opportunity for the invasion of organic disease, to avert which should occupy the care of the physician, by prescribing such regimen and laying down such rules of life as would increase nutrition, diminish waste, and prevent mental shocks; and by these means give a new term of life, however short.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ROBERT M'DONNELL, M.D.

Secretary—E. H. BENNETT, M.D.

Pleurisy and Hydro-pericardium e vacuo.—DR. NIXON said:—The subject from whom these specimens were taken was a man, aged twenty-two, who had been under the care of my colleague, Dr. Hughes, from the 27th September till the middle of January last. He had been admitted for pleurisy, and when he came under my observation in January he presented all the evidences of pleural effusion on the right side; the dulness behind extended as high as the spine of the scapula, and in front up to the nipple. The heart was considerably displaced to the left side, the apex beat being at the left nipple. The patient seemed to get on very well under ordinary treatment, until bronchitis set in; then he had sleepless nights, and one night especially the resident thought he was dying, having found him sitting up in bed, gasping for breath and livid in the face. On the following morning I thought it necessary to interfere, by operative procedure, to relieve him from the fluid in his chest; and, having consulted my colleagues, it was agreed on to perform paracentesis thoracis. Tapping, with Dieulafoy's aspirateur, the right side, between the sixth and seventh ribs, a little in front of the axillary line, as that was the point in which respiration was least marked, I drew off upwards of four and a half pints of clear serous fluid quite untinged with blood. The patient coughed a good deal during the operation; he became weak, and it was consequently deemed injudicious to take away any more fluid. After the operation he felt somewhat better, expressed himself easier, and was able to lie down in bed. Shortly after, however, severe vomiting set in, which continued for three hours. This, then, subsided, and the man seemed to be getting on tolerably well; but about 7 o'clock in the evening the pulse became very rapid, and the respirations increased in rapidity. At 12 o'clock that night the respirations were 70, the pulse 150; he had a congested face, and was gasping for breath. Loud gurgling râles were heard over the right lung, and, to a less extent, over the left. He continued in this state until the following morning, when he died. At the autopsy we found the parietal portion of the pleura was greatly thickened; a layer of lymph covered parts of the visceral portion. The right pleural cavity contained three or four quarts of serous fluid. The right lung was

small, dense, and airless. It was gorged with blood, and sank rapidly in water. The left was also congested. Upon examining the heart I found it was intimately attached to the chest-wall, corresponding to the left nipple. This accounted for the displacement that existed during life, and the increase of dulness towards the left side. The pericardium was intimately attached to the heart for about two-thirds of its extent by dense lymph, evidently the result of old inflammation. In the portion of the sac of the pericardium which was non-adherent to the heart, I found from eighteen to twenty ounces of bloody serum. With reference to the cause of death, the explanation I would offer is this, that on the withdrawal of the fluid from the right side—taking into consideration that the lung did not expand—a vacuum was created on the corresponding side of the chest, at the same time pressure being removed from the blood-vessels, the passage of the blood into the lung was facilitated; thus an intense collateral œdema took place, destroying whatever aerating portion of the lung might have previously existed. The same cause would also effect a separation of the two layers of the pericardium, giving rise to what has been described as *hydro-pericardium e vacuo*.—January 30, 1875.

Case of Elephantiasis Arabum.—DR. WHEELER said that the subject of this case was a woman, thirty years old, who was admitted under his care on the 16th of October, 1874. She stated that she continued to suffer from the disease for a period of eighteen years. Her father was alive, the mother died after confinement, and the rest of the family were all healthy. The disease began with a pain in the foot, when the patient was ten or eleven years old; the ankle then swelled, again subsiding, and again enlarging. She suffered during this period from the fever known as elephantoid fever, which continued periodically for about a year and a half. The disease appeared to become stationary as regards enlargement for about two years, and afterwards the pain commenced anew and the limb continued to enlarge, but not going further than a little above the ankle-joint. The “crevice,” as it is called by Virchow, formed at the inner malleolus, and the folds of skin lying on one another caused ulceration. A large excavated ulcer now formed, five inches in length and four in width, and pieces of bone came away in the vicinity of the ulcer. It appeared that in this case elephantiasis preceded ulceration, and higher up in the limb the ulceration preceded the elephantiasis. In that he could only reason analogically, inasmuch as the tissues of the limb where he amputated were perfectly healthy; and as the disease had been stationary for some time in the limb a little above the ankle, before ulceration of the superior part of the limb commenced, it would appear that in this case ulceration preceded elephantiasis. In this case the limb was immensely developed, the blood-cells and reticular connective tissue,

with the fascia over the gastrocnemius muscle, were enormously thickened, and its elements, more lax than ordinary, were abundant in intercellular substances. The tunica adventitia of the blood-vessels, popliteal artery, and vein was very much thickened; otherwise the vascular coats were normal. The size of the sound limb, as compared with the diseased, was as follows, in inches:—Sound—round ankle, $8\frac{1}{4}$; round calf, 13; round dorsum of foot, $9\frac{3}{8}$. Diseased—round ankle, 20; round calf, $26\frac{7}{8}$; round dorsum of foot, $18\frac{3}{4}$. The operation was performed on November 3rd, 1874, the patient being placed under ether by Mr. Richardson's apparatus, which is considered, in the City of Dublin Hospital, as the best apparatus for the administration of ether. Three small vessels were deligated with the femoral artery, and an enormous quantity of venous blood flowed from the femoral vein, which after some time ceased, when the limb was elevated. After the operation the patient suffered from some collapse; pulse feeble; perspiration over face and trunk; lips anæmic. By the administration of stimulants she came round gradually, has since been progressing favourably, and is at the present time able to sit up in her bed.—*January 30, 1875.*

Fracture of the Os Calcis.—DR. E. H. BENNETT exhibited a specimen of this injury, and gave the following account of its history and details:—The bone was removed from the body of a patient who died in an English lunatic asylum, and was brought to me by a former pupil of the School of Physic, Dr. Levinge. The subject of the injury was a young man of ordinary stature and development; he leaped from a window in a paroxysm of acute mania, and lighted on the ground on his feet, falling a height of about fourteen feet. On being taken up a wound was discovered at the outer malleolus of his left foot, and a fracture of bone in the neighbourhood of the ankle-joint was also readily detected.

The limb was placed in some form of splint, the exact nature of the fracture not being ascertained, and the patient was moved first to the local infirmary, and subsequently to the lunatic asylum, as his mania seems to have attracted a larger share of attention than his fracture.

Gangrene of the limb rapidly set in, and the patient died in a few days. No detailed examination of the symptoms of the fracture was made, so I am unable to give any account of the deformity which attended it. This is to be regretted, as *post mortem* examinations of fractures of the os calcis in cases where the symptoms have been recorded are not numerous, and the characters of fractures even so extensive as we see here are by no means well marked, and are, and have been, even by the best observers, frequently mistaken.

After prolonged maceration I have, with some difficulty, placed the numerous fragments of this specimen together in their right relative

positions. The bone is a left os calcis. The posterior and larger articular surface, which supports the astragalus, is cleft in two by a fracture which runs a little external to the middle of the articular surface, passing nearly parallel to its long axis. This fracture may, for the purpose of description, be regarded as the prime fracture, while, in all probability, it was the first to occur in consequence of the concussion of the fall being chiefly borne by this part of the bone. The second line of fracture to be noticed is placed at right angles to the anterior extremity of the prime fracture, which joins it at the anterior extremity of the articular surface. This fracture traverses the line of attachment of the inter-osseous ligament, which fills the tunnel between the astragalus and os calcis. On the inside of the upper surface it passes between the two (in this specimen) articular surfaces for the head of the astragalus. On the outside the line of fracture is carried down to the under surface of the bone, which it reaches about half an inch in front of the greater tuberosity. The plane of the fracture indicated on the surfaces of the bone by these lines is so placed at right angles to the plane of that I have named the prime fracture, and it detaches the anterior extremity of the bone, including the smallest of the articulations for the astragalus with the cuboid articulation. Several secondary fractures traverse the piece of bone so separated, breaking it into five large fragments, and the cancellous structure is completely crushed so as to defy any attempt at fitting its several particles together. The cuboid articulation is split in two by one of these fractures; all these were held together very closely by the periosteum, and the cartilage of the cuboid articulation was not entirely torn through. The third chief fracture passes across the upper surface of the bone parallel to the second, behind the articulation traversed by the prime fracture, which joins it at right angles close to the posterior margin of the articulation. The plane of this fracture passes down nearly vertically through the body of the bone for about a third of its thickness, and then passes downwards and forwards to meet the second fracture at the under surface. By this fracture the entire posterior extremity of the bone, with its tuberosities, is detached in a single piece, much in the same way as we see in the simple fracture of the bone which results from muscular action, or at least that has been attributed to this cause. Comparing this specimen with the representation of the fracture of the os calcis "*pär ecrasement*," published by Malgaigne, Plate XVI., Fig. 9, we see that in all essential points the injury is identical with that represented in the Plate. The characters of this fracture, the second variety of Malgaigne, derived from the examination of a specimen in the condition presented here, would appear likely to mislead, for one is inclined to say that so great a degree of comminution of the bone could not fail to present evident symptoms. Such is, however, not the case, for the various fragments

are so bound together by periosteum, and by the ligamenta, muscles, and fasciæ inserted into the bone, that crepitus has, with difficulty, been detected in many cases—in some not at all—and in many the injury has been confounded with fracture of the fibula, as there is reason to think it was in this. Nor is this error unlikely to be committed, when we find that it has happened to such observers as Malgaigne, Voilemier, and Bonnet.—*February 6, 1875.*

Disease of Petrous Bone ; Abscess of Cerebellum.—DR. T. E. LITTLE made the following communication, and exhibited the diseased parts :—Margaret S., a servant woman, aged thirty, was admitted to Sir Patrick Dun's Hospital in the month of February, 1875, complaining of discharge from one of her ears, of pain of the head, and of sick stomach.

The following particulars as to the *history* of her case were elicited :—About fifteen years ago she received a sharp box on the right ear, which hurt her much, and made her immediately deaf. She remained almost entirely deaf of that side for some months, but gradually recovered her hearing ; continuing, however, to be subject to occasional attacks of deafness in the hurt ear, whenever (as she said) she “caught a cold.” About a year before her present illness she, for the first time, suffered from slight running from this ear, which has lasted, with occasional intermissions, ever since. She was in the habit of frequently syringing out the ear with some mild astringent lotion, or with simple tepid water. About a month ago she became sick, and disinclined for work—“caught a cold,” as she thought ; the discharge became more profuse, and she began to complain of pain in the region of the affected ear, and of the head generally.

Her *symptoms* on admission into hospital were the following :—She had a scanty otorrhœa of the right ear, the discharge being of a thin sero-purulent character, devoid of fœtor ; she complained of considerable pain of that ear, and continual pain of the head, which she did *not* refer more to the right than to the left side ; there was persistent vomiting of food of all kinds, even when taken in the very smallest quantities, excited more especially if she sat up in bed ; this symptom, which had come on during the last week, was that which had most urgently compelled her to seek for hospital relief ; it was associated with remarkably clean tongue ; her aspect and manner were somewhat listless and drowsy, her movements and speech slow ; she slept badly ; the light was somewhat painful to her ; there was not the least tenderness of any of the external parts of the ear, or of the mastoid bone, or of any of the parts around ; no facial paralysis existed, but she was almost entirely deaf of the affected ear—could only just hear the ticking of a watch held firmly against the pinna ; the palate presented no obliquity, or defect of motility ; the pulse was very slow.

In the *progress* of the case the otorrhœa continued, the quantity of

discharge, however, being insignificant, and becoming decidedly more scanty towards the end; the pain of the head, too, persisted—never very severe, and always of a more or less universal character—she chiefly referred it to the very vertex; the vomiting remained unrelieved by any of the measures adopted for it, the tongue being still remarkably clean; she became gradually more and more drowsy; the pulse continued persistently very slow, never counting more than 56 in the minute; the pupils were normally contracted until the last few days of life; the bowels were obstinately constipated. On the day before her death she became delirious, with delirium of a quiet, muttering character, and the pupils became widely dilated and insensible. No paralytic symptom had supervened from first to last. She had occasional chills, but no distinct rigor. She became slowly completely comatose; and in this condition she *died* on the twelfth day after admission to hospital.

At the *autopsy* the head alone was examined.

The calvaria presented nothing unusual.

The arachnoid was dry, and (with the exception to be presently noticed) had no lymph, either superficial to, or beneath it, in any situation: the subarachnoid fluid existed in not abnormal quantity. The superficial cerebral veins were engorged with liquid blood.

The dissection of the centrum ovale was made with the brain *in situ*, and the ventricles then opened. This manner of examination showed the ventricles to be distended with a large excess of clear pale-coloured serum. On proceeding to the removal of the brain everything appeared to be normal, until we came to that of the cerebellum, the anterior part of the right lobe of which was, at a single very limited spot, intimately adherent to the back of the petrous bone; and in the endeavour to separate it a large abscess in its substance burst. With care, however, the whole brain was removed.

Every portion of the *brain*, except the cerebellum, was perfectly normal and healthy in appearance. A large abscess—larger than a billiard-ball—occupied the right side of the cerebellum, excavating the right lobe, and even passing across the middle line along its upper surface towards the opposite side, and towards the mesocephalon. It was filled with thick tenacious pus, of greenish-yellow colour, and of abominable fœtor, the limiting wall of the abscess consisting apparently of the substance of the cerebellum in a sloughing state, and almost black. This abscess approached the surface at the spot mentioned above, where the surface of the cerebellum was adherent to the dura mater and petrous bone. This spot is situated behind and a little higher than the internal auditory meatus; the extent of adhesion was very limited, not occupying more than the area of a circle of a couple of lines diameter, and was quite clear of the meatus; it corresponds in situation to the small, but very constant, pit found in this place on the posterior aspect of the petrous

bone, and described usually as a depression for a small process of the dura mater. A small mass of solid yellowish lymph lay in the subarachnoid space between the corpus callosum and the cerebellum (the *superior subarachnoid space*), in which were imbedded the veins of Galen.

On proceeding to the examination of the *cranium*, the dura mater over the superior surface of the petrous bone could be observed to bulge upwards as a prominent fluctuating swelling, and on dissection I found this membrane to be stripped up, by pus between it and the bone, from the superior and posterior surfaces of the petrous bone to a certain extent, the superior petrosal sinus being at the same time in this manner dissected up, and raised up from the bony groove in which it lies. The whole of this piece of the disease lies external to and behind the situation of the internal auditory meatus. I could *not* make out any actual continuity of the space where this sub-meningeal effusion of pus existed and the cerebellar abscess. A considerable extent of osseous disease was immediately apparent through the thinned upper surface of the petrous bone; this surface of the bone was, however, almost entire, having only a single small—almost pin-hole—opening in it, leading into the roof of the tympanum. On exploring the petrous bone it can be observed that, towards the base of it, it is occupied in its interior by a small caseous nodule, of the size of a hazel-nut. The precise position of this diseased mass corresponds to the situation of the posterior wall of the middle ear (involving thus the opening into the mastoid sinuses), and to that of the external semi-circular canal and the region of the bone posterior and external to it. The mastoid sinuses are plugged with mucous and caseous matter, their cells being of preternaturally small size, apparently from thickening and induration of the osseous tissue of the mastoid process.

The state of the cerebral *sinuses* in these cases is a matter of some interest, and they were carefully investigated in the present instance. The lateral sinus is entirely healthy, presenting neither a trace of inflammation of its walls nor of thrombosis of its contents. Not so the superior petrosal sinus however, the external three-fourths of it being plugged with a tough, obviously old, and adherent clot. A piece of this thrombus of considerable length hung out from the mouth of the sinus into the lateral sinus, where the two communicate. The anterior and internal quarter of this sinus (the petrosal) is quite uninfamed and pervious. All the other sinuses are normal.

As to the condition of the *organ of hearing*, the external ear is normal, but the meatus externus is occupied by a small polypus, of the size of a split-pea, which is attached by a short pedicle to the remnant of the *membrana tympani*, and which appears to have sprung from within the cavity of the tympanum. The *membrana tympani* is almost entirely gone, being only represented by a few shreds of fibre; the ossicula appear

to have long disappeared; the mucous membrane of the tympanic cavity is thickened and pulpy where it remains in certain places, the internal (osseous) wall and the roof of the tympanum being, however, denuded, and not otherwise sharing in the bony disease; the fenestra ovalis and fenestra rotunda remain normal in size and shape, but without any remnant or trace of their respective membranes. The extent and locality of the bone disease involving the internal ear has already been described.

Remarks.—This case suggests a few special questions of interest.

In the first place, as to the course the disease ran, the most probable sequence of the different pathological events in the case would appear to have been this:—It is probable that the blow upon the ear, received fifteen years before death, had caused the rupturing of the membrana tympani; the sudden change of density produced in the air in the auditory meatus by a blow inflicted perpendicularly with the flat of the hand may be, when the subject of the violence is unprepared for it, competent to produce such an accident. By the same principle of action a like injury has been known to occur to a bather striking the water from a height with the side of the head. It is plain, from the serious interference with the function of hearing which *immediately* resulted in the present case, that some sudden mechanical violence was done to the delicate inner mechanism of the organ. This condition left the internal mucous passages of the ear liable to repeated inflammatory attacks, indicated in the patient's history by the intermittent attacks of deafness she describes as supervening whenever she "caught cold." This eventually induced a state of chronic inflammation of the middle ear, causing otorrhoea. The irritation of a long-continued otorrhoea of this character is acknowledged as one of the exciting causes of aural polypus. The irritation spreading in another direction may, too, induce disease of the bony parts in which the middle and inner ear are situated: necrosis even, with exfoliation of considerable portions of the petrous bone, has been met with. In this instance we had caries and caseous degeneration of the bone in the region of the osseous labyrinth. As may result in caries of any other bone, suppuration beneath, with stripping up of, the periosteum occurred; and, as a result of the same osseous disease, we have produced an abscess in the cerebellum. The sole evidence of extension of inflammatory action to the meninges consists in the small mass of lymph found in the superior subarachnoid space. This space, it will be observed, is precisely in the situation of extension inwards and deeply of the cerebellar abscess. By its obstruction of the veins of Galen this subarachnoid effusion caused the last link in the pathological chain—dropsy of the ventricles, which, I take it, was that which constituted the immediate cause of death in this case.

A word is necessary as to the causal connexion between the bone

disease and the abscess in the cerebellum. Attention to the details of the particular observation made in this case elicits one instructive and significant point. It will be observed, that is, that I have mentioned, that the posterior, or cerebellar, surface of the petrous bone is *not*, in this instance, the situation where we find the principal focus of the bony disease, which involves mainly the region of the semi-circular canals, and does not extend at all to the posterior surface. This shows us that we must look to some mode of connexion other than that of extension by mere contact, or propinquity to explain the association. Such a mode of interpretation would have led us, in this case, rather to expect abscess of the middle lobe of the cerebrum. The following considerations would appear to afford the real clue:—A glance at the mode of development of the petrous bone will show that the slight pit on its posterior aspect, alluded to above, is, in reality, the representative rudiment of the space underneath the arch of bone, which, the superior semi-circular canal forms during the early months of foetal life. In the foetus this space is filled by a soft vascular mass, or process, of the dura mater, and both at this period and in the adult it is the channel for a vascular communication between the cerebellum and the corresponding part of, or parts contained in, the petrous bone. Other vascular connexions, moreover, exist between the cerebellum and the parts of, and around, the petrous bone, and notably, the superior petrosal sinus; but the particular connexion above noticed I refer to, as it is more specially indicated in the details of the present case. It is, then, I deem, to the fact of this vascular connexion between the two regions that we must look for the real explanation of the association of petrous bone disease and cerebellar abscess.*

I may be permitted to allude briefly to one clinical point in the case—viz., the persistent vomiting. Relying upon the observation made by M. Brown-Séquard as to the pathognomonic character of this phenomenon as a symptom of cerebellar disease, we were enabled, in the present instance, to diagnose successfully the situation of the encephalic abscess.

The small polypus, which had precluded the possibility of any accurate

* By the kind permission of Professor M'Dowel, I am allowed to refer to a case, which occurred in his practice some years ago, and of which I have a note accurately made at the time, the particulars of which are strikingly similar to those of the present case, and will, I have no doubt, bear a like interpretation. The case is that of a woman, twenty-eight years of age, who—the subject of a chronic otorrhoea—died September 18th, 1865, with symptoms of facial palsy, persistent ear and head ache, uncontrollable vomiting, slow pulse, and eventual coma. The autopsy showed a large abscess of the cerebellum, with sloughing walls. My notes go on to say:—"This abscess approached the surface, and had caused adhesion of the cerebellum to the petrous bone at a point immediately behind and above the meatus auditorius internus. No disease of the surface of the petrous bone seemed to exist, but the walls of the tympanic cavity were in a softened and carious state."

local examination of the deeper parts of the ear during life, was (before *post mortem* examination) mistaken for the soft fungus-like outgrowth of exuberant granulations, which not infrequently fill up the external meatus in cases of caries of the petrous bone. It is useful to bear in mind that true polypus may, as in this case, occur. Perhaps the chief distinguishing feature between the two would consist in the exquisite tenderness of the fleshy outgrowth, as contrasted with the insensibility of the polypus.—*February 13, 1875.*

Encephalitis resulting from Disease of the Ear.—DR. BARTON said : The case I have to bring under the notice of the Society will present at once a contrast to that of Dr. Little, together with some points of resemblance. It is a case of disease of the temporal bone leading to death from implication of the brain, but in a different manner from that in Dr. Little's case. A boy, aged thirteen, was admitted to the Adelaide Hospital on the 19th of January last. When he was brought into the room for admission he was held up by the woman accompanying him, and he was able only to stagger. His head hung forward, and when spoken to he did not make any reply. At the same time he seemed to be aware of the sounds going on around him. His pupils were dilated, but on exposure to light they contracted in a vigorous manner. The patient had had for many years a chronic discharge from the left ear. He was at a school near Raheny, where the woman in charge of him constantly syringed the ear. During the severe weather at the close of last year he caught a cold. The discharge stopped, and he was observed to be heavy and drowsy. It appears that four days before his admission to hospital he was obliged to wait at the door of the school-house for some time in the cold. He looked ill on going home that day, had a shivering fit, and next day was partly insensible. That was on a Saturday, and on the Tuesday following he was brought to the hospital. On his being placed in bed, we made a careful examination. The pulse was 116 ; there was a constant low muttering delirium, and he constantly attempted to get out of bed. During the following night he did not sleep at all. There was constant crying out, singing, making a noise, throwing the hands about, picking the clothes, but no sleep. The pupils were widely dilated, but contracted on exposure to light. On the next day the pulse was 120, and of the same character, and his hands were constantly moving about, as if in search of something. During the whole of this time there was no vomiting, but the woman who was in charge of him stated that there had been vomiting during the Sunday and Monday before his admission to hospital. The case went on very much in the same way until the following Friday, when a remarkable symptom occurred, in addition to those already noticed, which had continued to deepen in intensity. Upon visiting the patient that morning, I noticed that the right eye was

projected from the orbit; it had advanced beyond the plane of the left eye. The eyelids, especially the lower, being cedematous, we thought that, perhaps, matter was forming in the cellular tissue of the orbit, but next day the swelling and protrusion were somewhat less. At the same time the comatose state was deepening, and with increasing insensibility to light and sound. He died upon the morning of the 26th, just a week after his admission. On making a *post mortem* examination, I found the brain presented throughout characteristic and marked symptoms of inflammation of the pia mater, with effusion beneath the arachnoid. The sides of the longitudinal fissure at its anterior extremity was agglutinated together with lymph. The fissure of Sylvius was filled up with lymph. There was no abscess; no pus anywhere to be found. I then turned to the lateral sinuses, and I found that they presented no distinct signs of inflammation in their lining membrane. I then opened the right orbit, and found the eyeball bathed in a depot of pus, which had formed in the cellular tissue of the orbit. The question was, how did this come from the disease that subsisted in the ear? The petrous bone, you will see, is just as hard and rocky as ever. I thought we might find the passage of entrance from the inflammatory disease going on in the internal auditory canal, and on making a section we find abundant evidence of advanced inflammation in the inner ear, but no sign of inflammation along the wall of the nerve. On coming round to the site where the mastoid cells join in we find a perforation between these and the lateral sinus—a pin-hole orifice, which opens into the upper part of the lateral sinus. Through this opening, doubtless, the inflammatory action extended into the cranium. The intraorbital inflammation may have been caused by an extension of the inflammatory action through the foramen lacerum, by means of the cellular membranes. Its occurrence is an interesting fact, and explains the remarkable protrusion of the right eyeball during life—a symptom which, I believe, was first put on record at a meeting of this Society by Professor M'Dowell.—*February 13, 1875.*

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

Of Eight Large Towns in Ireland, for Four Weeks, ending Saturday, June 19th, 1875.

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Small-pox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	686	547	—	2	14	6	4	20	3	22·6
Belfast, -	182,082	502	375	—	36	19	2	12	14	10	26·8
Cork, -	91,965	222	180	—	—	3	—	1	3	3	24·4
Limerick, -	44,209	71	69	—	—	—	1	—	5	2	26·5
Derry, -	30,884	53	58	—	—	14	—	—	—	—	24·4
Waterford, -	30,626	69	51	—	—	—	—	—	3	—	21·7
Galway, -	19,692	43	31	—	—	—	—	—	—	—	20·5
Sligo, -	17,285	38	27	—	—	1	—	—	1	—	20·4

Remarks.

The return for Limerick, No. 3 District, for the week ending May 29th, was not received, so that the death-rate given above is for three weeks only. The death-rate was high in Belfast and Limerick, rather high in Cork and Derry, moderate in Dublin and the other towns. Zymotic diseases caused 85 deaths in the Dublin Registration District; of these, 64 occurred within the municipal boundary. The zymotic death-rate was rather low in Dublin, but was very high in Belfast, where a severe epidemic of measles still rages. Scarlatina has been fatal in Belfast and Derry. The rate of mortality for the four weeks was, in London, 20 per 1,000 of the population annually; in Glasgow, 28; and in Edinburgh, 23.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for Month of May, 1875.*

Mean Height of Barometer, - - -	29.978 Inches.
Maximal Height of Barometer (9 p.m. on 26th),	30.427 „
Minimal Height of Barometer (3 p.m. on 21st),	29.244 „
Mean Dry-bulb Temperature, - - -	54.4°
Mean Wet-bulb Temperature, - - -	50.3°
Mean Dew-point Temperature, - - -	46.3°
Mean Humidity, - - -	74.2 per cent.
Highest Temperature in Shade, - - -	72.8°
Lowest Temperature in Shade, - - -	40.7°
Lowest Temperature on Grass (Radiation), -	36.8°
Mean Amount of Cloud, - - -	56 per cent.
Rainfall (on 15 days), - - -	1.071 Inches.
General Direction of Wind, - - -	W.N.W., W. & S.W.

Remarks.

May, 1875, may be considered to have been a very fine month, with much bright mild weather, and but a scanty rainfall, which was, however, distributed over fifteen days. There were two periods of barometrical depression, from the 5th to the 9th, and from the 17th to the 22nd. There were also two periods of high barometrical pressure, with anticyclonic weather, from the 10th to the 16th, and from the 23rd to the 27th. The sun had great power in the former of these anticyclonic periods, the 14th being an especially fine and warm day (max. temp. in shade = 72.8°). Hail fell on the 9th and 18th, and heavy showers daily from the 17th to the 22nd. A solar halo was observed on the 2nd. There was no thunder or lightning in Dublin. The bourrasque of the 28th was polar in character, and travelled from north to south. No frost, even on the grass, occurred during the month.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

ROTATORY MOTION OF THE HEART.

H. WILKENS publishes (*Deutsch. Archiv. für Klin. Med.*, 1874; XII., 233) an interesting communication on the motions of the heart, as directly observed by him in the case of a man in whose thorax there was a wide fistula. By directing reflected sunlight into this fistula, the motions of the heart, covered by the pericardium, could be distinctly perceived. The heart was much displaced towards the right side. With every systolic act the left and rather sharp border moved forwards and to the right, the vertical groove, which could be seen through the pericardium, taking up a position at the same time more in the centre of the latter, a large portion of the left ventricle coming into view anteriorly. Simultaneously the whole organ was also distinctly observed to be forced downwards. These visible motions were further corroborated by actual examination with the index finger thrust in through the fistula. A small rod fastened to the heart near its apex (as was proved *post mortem* by minute spots of extravasated blood), and to which another rod was attached transversely, showed that the point fixed in the heart described a curve, the concavity of which looked inwards, running from behind forwards and downwards. The author views the systolic rotatory motion of the heart, and of the impulse of the apex observed in this case, in the light of Bamberger's and Kornitzer's theory; and points out that the arrangement of the muscular fibres of the heart, and particularly of the middle spinal layer, must bring about a rotatory movement of the apex also during contraction, as was here seen (from the observer's right to left). He shows further that the rebound, according to Skoda, besides causing the heart to move downwards, must also favour the twisting, already commenced, of the whole organ.—A. E. J. B.

CHRONIC ERYTHEMA OF THE FACE; REVULSIVE TREATMENT BY BLISTERS ON THE ARM; RECOVERY.

At a meeting of the Boston Society for Medical Improvement, Dr. Abbot reported the case of a middle-aged lady, who had been suffering during the greater part of a year from chronic erythema of the face. The attack commenced with an indolent, very painful pustule on the right side of the septum of the nose. The whole organ was much reddened, swollen, and tender. The pustule was very slow in its progress, and there were several renewals of the inflammation at the original spot.

These attacks were accompanied and followed by more or less erythema of the face, in the form of large patches on the cheeks and forehead. During the epidemic of small-pox in Boston, in the latter part of the year 1871 and the beginning of 1873, the patient was re-vaccinated, and had a very sore arm in consequence. At the time of vaccination there was much inflammation of the face, which entirely subsided, while the inflammation produced by the vaccination lasted. As this subsided the erythema returned to the face. This affection had been previously treated by various remedies without any very satisfactory result. When seen by Dr. Abbot, January 6, 1873, both cheeks were marked by large patches of livid redness, which were very tender, and gave to the touch the sensation of considerable thickening of the derma. The nose at times was very red and sore, and the affection, as a whole, was a great disfigurement, and a source of no little suffering. Acting on the hint given by the vaccination, it was determined to try the effect of revulsive treatment. A blister two inches square was applied to the outer surface of the left arm. As this was healing, a second was applied on the healthy skin above. In this way a succession of blisters was kept up for a month, securing a continuous irritation of the part. Under this treatment the inflammation of the face and nose gradually subsided, and at the end of that time had entirely disappeared. During the next two months there was an occasional return of the erythema, but it immediately disappeared on resuming the blister treatment. There has been no return of the affection since, a period of about two years.—*Boston Medical and Surgical Journal*.

MUSTARD FOOT-BATH IN URTICARIA.

A WRITER in the *Tribune Médicale*, March 7, recommends the use of the mustard foot-bath in cases of urticaria. In his own case, after trying innumerable remedies, he was about to abandon all hope of relief, when, one day, while suffering from a peculiarly aggravated attack of his old enemy, complicated by an excruciating headache, and hoping to relieve the latter, he plunged his feet into a mustard-bath. The relief was instantaneous, and it seemed as though the skin-disease had disappeared by a wave of the hand. Five other cases were subsequently treated by the writer, with similar relief. The treatment is, of course, understood to be only palliative, and has no influence in preventing recurrence of the disorder.—*Philadelphia Medical Times*.

VOCAL FREMITUS IN PLEURISY AND PNEUMONIA, AND THE USE OF THE HYPODERMIC SYRINGE IN THEIR DIAGNOSIS.

IN reporting two cases of pleurisy with effusion, in which vocal fremitus was present over the affected portion, Dr. E. G. Janeway, of New York, calls attention to the value of vocal fremitus as a physical sign in the

diagnosis of pleurisy with effusion from pneumonia, as it seems to him that it is not infrequently rated too highly, and is, certainly, not an absolute means of distinguishing one condition from the other. He gives the following summary of the conditions of vocal fremitus in pleurisy and pneumonia:—1st. Vocal fremitus is usually absent over fluid in the pleural sac. 2nd. When present (*a*) it is sometimes due to adhesions of the lung to the chest wall below the level of the liquid. *b*. Again, it is sometimes conducted through the fluid, and then it may be either feebler or more intense than on the opposite side. *c*. In some cases vocal fremitus does not exist or is very feeble at the lower part of the chest on the sound side; under these circumstances its absence on the diseased side loses some of its relative value. 3rd. Vocal fremitus is usually increased over pneumonia of the lower lobe. 4th. It may, however, be very feeble or absent. *a*. This may be due to obstruction of the bronchus by compression, or by the accumulation of some material in it, as, in one of the cases reported, coagulated blood. *b*. Sometimes it seems due to the presence of a considerable amount of exudation in the pleural sac. *c*. The amount of solidification is supposed at times to be the cause. 5th. Vocal fremitus is sometimes absent on the sound side; under such circumstances the existence of considerable vocal fremitus on the diseased would point strongly towards, though not be decisive of, pneumonia, as the morbid condition present. In doubtful cases, where, if fluid should exist, the line of treatment would be decidedly different, Dr. Janeway recommends that an exploratory puncture should be made. This may be done by means of a small needle attached to the aspirator, or, as this not infrequently alarms patients, at Bellevue Hospital a hypodermic syringe, of good suction power, is often employed for this purpose. Considerable difference exists in the suction power of these instruments, and Dr. Janeway has seen one introduced in a chest and fail to obtain fluid when another immediately afterwards succeeded. The safest test is not that of seeing whether water can be drawn through the needle into the barrel of the syringe; but, placing a finger over the nozzle, withdraw the piston and retain it in this position for a few seconds, and then note if the atmospheric pressure will force the piston back to its original position. With one, which answers perfectly to this test, Dr. Janeway has succeeded in drawing pus from abscesses; and lately, in order to give it a fair test and also to relieve a patient, he employed it to remove thick gelatinous fluid from a ranula. This fluid was a little more viscid than the mucus of cervix uteri. If honest doubt existed after its use it would be wise to make use of an instrument with greater suction force.—*New York Medical Record*, June 5.



Plate I



Lithographed by John Edmonson Dublin

From a Photograph

MR STOKES ON SUPRA CONDYLOID AMPUTATION OF THE THIGH.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

AUGUST 2, 1875.

PART I.

ORIGINAL COMMUNICATIONS.

ART. III.—*On Supra-Condylloid Amputation of the Thigh.* By
WILLIAM STOKES, M.D., Ch.M. Univ. Dub., F.R.C.S.;
Professor of Surgery, Royal College of Surgeons, Ireland;
Surgeon to Richmond Surgical Hospital; Fellow of the Royal
Medico-Chirurgical Society of London, &c., &c.

I DEEM the following cases worthy of record, not only on account of the clinical interest attached to them, and the results which were obtained after supra-condylloid amputation, but mainly because I believe these results will tend to confirm the high opinion that is held of that operation by all surgeons who have performed it. These reasons induce me to draw attention again to the advantages which I consider may be claimed for the procedure—advantages which render it, in my opinion, decidedly preferable to the knee amputations of Velpeau, Syme, Gritti, and Carden, and also to the operation of excision of the knee-joint, being attended with far less risk to the patient than that procedure—one which is ever fraught with the greatest peril to those on whom it is performed, and, notwithstanding the enthusiastic but, I think, extravagant praise that at times has been lavished on it as a mode of proceeding, disappointing in its results, and inferior to the operation I now advocate.

CASE I.—Michael W., aged twenty-eight, by occupation an ironmonger, was admitted into the Richmond Surgical Hospital,

under my care, on the 8th of last August. The first appearance of the disease from which he suffered—necrosis of the upper third of the tibia, preceding chronic synovial inflammation of the knee-joint—was in the year 1870. The patient stated that in that year several pieces of bone came away through various sinuses situated on the anterior and internal aspects of the upper portion of the shaft of the tibia. In the following year the knee became affected, and two years subsequently amputation was suggested to him, but at that time he would not consent to the operation proposed. He then came up to Dublin, and was admitted into the Richmond Hospital. At the time of his admission the sinuses I have already spoken of had healed, and what appeared chiefly to call for surgical treatment were the synovial effusion and thickening. For some time I entertained the hope that by rest, vesication, iodine, and the internal exhibition of anti-strumous remedies, I might possibly succeed in saving the limb. I accordingly put the limb up in a gypsum bandage, adopting the Bavarian method, which has been so strongly advocated by my colleague, Dr. Corley, and followed out the treatment I have already alluded to, the details of which need not be discussed. This I continued for nearly two months, and then finding that no improvement had taken place, but rather the reverse, the sinuses having re-opened and revealed the existence of extensive osseous disease, I recommended amputation. As there was no evidence that the disease had involved either the patella or lower end of the femur, the case appeared to me adapted for supra-condylloid amputation of the thigh, and, assisted by my colleagues, Mr. Hamilton, Dr. Thomson, and Dr. Thornley Stoker, this operation I accordingly performed on the 7th of last October, Esmarch's bandage having been applied, and chloroform administered. The operation was as bloodless as it was painless, and I may mention here an observation made by my late revered colleague, Professor Adams, on this occasion. "It is the first time," he said, "in which I have witnessed an amputation of the thigh during which the patient did not give a single moan, or lose a single drop of blood!" As regards the steps of the operation, I may mention that, save in one particular, to which I shall presently allude, I followed rigidly the rules mentioned in former communications on this operation made to the Medico-Chirurgical Society of London and the Surgical Society of Ireland. As regards the progress of the patient after the operation, there was nothing noteworthy, except that the union of the wound was exceptionally



Engraved by John Walker Dablin

from a Photograph

MR STOKES ON SUPRA CONDYLOID AMPUTATION OF THE THIGH

rapid. A glance at the accompanying lithograph, taken from a photograph, gives a good idea of the appearance of the stump.

CASE II.—The following case, one of extensive necrosis of the bones of the leg, was specially adapted for supra-condyloid amputation, and the result may be judged of by reference to the lithograph which forms the frontispiece to this communication:—

John M., aged twenty-five, by occupation a draper, was admitted into my wards in the Richmond Hospital on the 2nd of last November, having been recommended to me by Dr. Ryan, of Ballynacally, county Clare. The patient stated that about nine years ago he experienced a sudden and violent pain in the right leg, immediately below the knee. For this he was unable to assign any cause, never having received any injury to the leg, and, previous to the first occurrence of the pain, always having been healthy. In about a month after the occurrence of the pain an abscess formed, which opened, and from which there was, for several months, a copious discharge of matter. About twelve months after this several pieces of bone came away. The openings then closed, and the patient continued tolerably well until about a year previous to his admission into hospital, when the pain and discharge commenced with increased severity. The whole shaft of the tibia appeared more or less engaged in the disease. At the original opening, immediately below the tubercle of the tibia, there was a large and loose sequestrum, the removal of which was effected a few days after his admission into hospital without any difficulty. On the 11th of November I removed the limb, adopting the supra-condyloid method of amputation. Nothing untoward occurred during the convalescence of the patient, and in the result may be observed, in a remarkable degree, the signal advantages which this method of amputation possesses over all the other similar operations, of which supra-condyloid amputation is the outcome.

To Professor Velpeau is undoubtedly due the credit of first pointing out the advantages to be derived from amputation at the knee. Among these may be mentioned that the weight of the body can be placed on the face of the stump; that the hip-joint preserves all its movements, the patient not being obliged to walk as if the hip-joint were ankylosed; and that the shock is not so great as after the ordinary amputations of the thigh.

The modifications of this operation, introduced by Professor Syme and Mr. Carden, were the next that were introduced into

surgical practice, and subsequently the modification of Carden's operation, which is known in Continental schools chiefly as Gritti's amputation; and, lastly, the operation which is the subject of this communication. The steps of Gritti's procedure I learned many years ago from Baron von Langenbeck, and many details of it from papers by Melchiorj and Prof. Rizzoli, of Bologna, whose excellent work on Clinical Surgery reflects high credit on himself and on the school of which he is a distinguished member. What the date of Gritti's original memoir is I have not determined; but as I find the date of Melchiorj's first case of Gritti's amputation was in 1851, the original suggestion must have been made previous to that year. Melchiorj's case was of a man whose leg had been crushed by the wheel of a locomotive. The bone was sawn on a level with the condyles, and, as might have been expected, the patella was soon drawn away from the cut surface of the condyles upwards on the anterior surface of the bone. The second operation performed by Melchiorj was in 1866. In consequence of the great and unavoidable tendency of the muscles to draw the patella away from the cut surface of the femur, Melchiorj and Gritti applied pasteboard splints round the stump immediately after the operation, forming a kind of box or *étui*. It is not surprising to learn, as we do from Rizzoli's memoirs, that this method of operating and subsequently treating such cases was found unsatisfactory, and attended with a high rate of mortality. The tendency to the occurrence of profuse suppuration and gangrene which was observed induced Rizzoli to modify the operation. Being of opinion that tearing the synovial membrane was one of the causes of these disastrous consequences, he first disarticulated the knee, as Gritti had done, then removed the synovial membrane, did not remove the articular surface of the patella, and divided the femur a little higher—how much, however, is not stated. This operation, though in some respects an improvement on Gritti's and Melchiorj's, does not commend itself to me, for the following reasons:—In the first place, the preliminary disarticulation must add greatly to the shock of the operation; secondly, the removal of the synovial membrane is not only unnecessary, but mischievous, for retaining it as a lining of the anterior flap must, in my opinion, diminish largely the chances of purulent absorption; and, thirdly, not splitting the patella is a serious defect, as not doing so must greatly diminish the chances of union between the two bones. Whether the femoral section is above or below the upper margin of the

cartilage of incrustation does not appear, but it is of the utmost and most paramount importance that the directions in reference to this point should be clear, accurate, and definite, for the success of the operation depends, I may say, altogether upon the situation of the femoral section. If it is below the point I have indicated in former communications of mine on Supra-condyloid Amputation—namely, from half to three-quarters of an inch above the antero-superior margin of the cartilage of incrustation—the patella will inevitably be tilted forward during the healing of the wound, unless perhaps the unsurgical and dangerous device of boxing up the stump tightly in pasteboard splints be adopted. If, on the other hand, the section be made too high, the medullary canal will be opened, and the dangers of the operation will be largely increased, and the split patella will hang down, and be on a lower level than the cut surface of the femur.

In the fourth and fifth cases I operated on I observed, even when the femoral section was made at the point I have indicated, a tendency to subsequent tilting forward of the patella, and I determined that in the next case I operated on I would take steps, without dividing the bone higher up, to secure that there should be no shifting of the bone from its moorings. This I accomplished in my sixth and seventh cases by stitching the bones together with carbolised catgut. In doing so I passed the needle, armed with the suture, through the tissues immediately adjacent to the centre of the posterior margin of the femur, and through those immediately above the centre of the inferior edge of the patella, and on fastening the ligature the two bones were kept in close apposition. Both ends of the carbolised suture were cut short and left in the wound, and in the course of some days were doubtless absorbed; but before that took place the patella had, so to say, become accustomed to its new position, and to be already partially united to the femur. I do not mean to convey that this method should be adopted in all cases; but when the patient is a well-nourished, muscular adult there is, even when the high femoral section is made, a tendency on the part of the extensors to tilt forward the patella, and in such cases the carbolised catgut suture is indicated, rendering, as it does, “assurance doubly sure.”

I may now briefly state the advantages that I think may be claimed for supra-condyloid amputation, which name I have selected in order that surgeons should bear in mind the necessity of making the femoral section *above*, and not through, the condyles, as in

Syme's, Carden's, and Gritti's amputations. These advantages are those which it has in common with the other amputations at the knee and those which are peculiar to itself. Among the former I may mention:—

1. The stump being more useful for progression in consequence of the possibility of making pressure on its extremity, and the patient not being obliged to walk as if he had an ankylosed hip-joint, as is always the case when the point of support is at the pelvis. As Dr. Markoe says:—"To the poor man this single circumstance makes all the difference, between his being able to earn his living by active employment and his being laid up for life a hopeless cripple. To the rich man who is able to secure the aid of an artificial limb, it makes the difference between a point of support at the knee and a point of support at the ischium. In fact, it is practically the difference between amputation below and amputation above the knee."

2. The diminished liability to the formation of tubular sequestra.

3. The operation is less hazardous, being further removed from the trunk than the ordinary amputations of the thigh.

4. The shock is less than in the higher amputations, as the muscles which are divided are few in number, and being cut, not through their fleshy bellies, but at their tendinous extremities.

5. Less liability to suppuration.

6. Less liability to osteo myelitis, from the medullary membrane not being interfered with.

The special advantages of supra-condylar amputation are—

1. That the posterior surface of the anterior flap is bound with a natural synovial lining, which I feel confident largely diminishes the chances not only of subsequent exhaustive suppuration, but also of purulent absorption.

2. Any possibility of the split patella shifting from its place on the cut surface of the femur is prevented by the high femoral section, and by stitching the two bones together in the manner I have described.

3. The existence of an osseous curtain, which is formed by the split patella covering the cut surface of the femur, diminishes probably the chances of pyæmia, and is not liable to slough away as the periosteal curtain as recommended by Von Langenbeck undoubtedly is.

4. The vessels are divided at right angles to their continuity, and not obliquely, as they are in other flap operations.

5. The existence of a posterior flap diminishes the chances of any

wide gaping of the wound posteriorly, while the anterior flap, being oval, increases the chances of the stump tapering gradually towards its extremity and assuming the form of a rounded cone.

6. The preservation of the normal attachments of the extensors of the leg.

To Professor Velpeau is due the credit of first recommending the preservation of the patella in amputations at the knee-joint, and this recommendation was adopted subsequently by Lane, Blenkins, and Markoe. To Gritti is due the credit of drawing attention to the fact of the great advantage that is derived from having the patella fixed, in order that there should be a firm standpoint on which the extensors may act. The operation, however, as practised by him, was in many respects a defective procedure, was attended, as Prof. Rizzoli informs us, with a high rate of mortality, and consequently soon fell into disrepute.

In supra-condyloid amputation, which is the outcome of the procedures I have alluded to—notably those of Velpeau, Syme, Carden, Gritti, and Rizzoli—I have retained the advantages observable in these operations, and eliminated what experience has shown to be defective in them, and the result obtained in my hands, and in those of my colleague, Professor Macnamara, and the other eminent surgeons who have performed the operation, lead me to the conviction that it must be conceded that, in supra-condyloid amputation, a signal advance has been made in operative surgery. It is a source of much gratification to me to be able to state that Mr. Wheelhouse, one of the eminent surgeons of the Leeds Infirmary, considers that supra-condyloid amputation possesses “advantages which render it *decidedly superior to any other known method of amputation of the limb*, and which render its adoption almost, if not quite, imperative.” This opinion was given in 1872; and, wishing to know in what estimation the operation is still held in Leeds, I wrote to my friend Mr. Jessop, one of the first, if not the very first, who practised the operation in England, and he observes:—“The supra-condyloid amputation fully maintains its repute here; I see no reason whatever to alter the opinion I expressed to you some time ago as to its merits. Whenever a suitable case presents itself, I prefer it (the supra-condyloid) to Carden’s, as well as to *all other forms of amputation* in the immediate neighbourhood of the knee-joint.”

Every surgeon to whom I have shown the results I have

obtained by this procedure has borne evidence as to the great shape-
 liness of form in the stumps, their appearance, and remarkable
 applicability for the adjustment of prothetic mechanical appliances.
 In truth, of the amputations in the neighbourhood of the knee-
 joint, supra-condyloid amputation undoubtedly affords the most
 satisfactory results; and, more important than all, is the operation
 of its kind which is attended with the minimum of risk to the
 patient's life.

ART. IV.—*South African Colonies as a Home for the Consumptive.*

By J. ALEXANDER ROSS, M.D.

[*Concluded from page 20.*]

There was little to notice on our onward journey. The country
 is monotonous. Not a tree to be seen! Yet it would be impossible
 to describe the exhilarating effects of that clear, warm air, as we
 ascended still higher and higher those Free State highlands.

Bloemfontein is the capital and seat of government of the
 Orange Free State; it is a busy town, scattered over a considerable
 space of ground. On one side is a commanding fort; on the other
 the country rises still higher towards the Drakensberg Mountains
 and the Transvaal Republic. The State is governed by a President
 and a Volksraad, or Legislative Assembly. The Roman-Dutch
 law is in force, and the utmost order prevails. The Church of the
 State is the Dutch Reformed, but all sects have the same religious
 privileges. There is a Bishop of the English Church, a zealous
 prelate, beloved and respected; he has established numerous
 schools for educating the children both of colonists and natives.
 A sisterhood of English ladies, banded together without vow,
 assists him in the good work. He hopes to found a sanatorium for
 consumptives; excellent plans have been prepared, and his arrange-
 ments, if carried out, would insure for the invalid the comforts of
 home and the tender nursing of intelligent ladies. Many English
 consumptives yearly resort to Bloemfontein, and they all feel sadly
 the want of such a home. All over South Africa the place has an
 established reputation for the cure of consumption. While there
 I saw several who had recovered; some, on being restored to
 health, returned to England, but, unable to remain, removed again
 with their families to Bloemfontein. I select the following case as
 giving a very favourable illustration of what may be accomplished

by a residence at Bloemfontein. There can be no doubt of its authenticity, or of its having been phthisis in its worst form; there is high authority for saying this. I transcribe the letter of Sir W. Jenner to the family physician; it is decisive. He writes:—

“I saw Dr. Burrows, and am glad to say that our notes of Mr. W.’s case and proposed plans of treatment quite agree.

“1st. We have no doubt that he is constitutionally tubercular.

“2nd. That he has deposit in the upper half of the right lung, and probably in the left, though less in amount and extent.

“3rd. That his larynx is suffering from the same state of the system.

“4th. That marriage would be highly improper in his present state.

“5th. That the best means of restoring his health would be a long sea voyage.

“6th. That the prognosis is not favourable on account of the state of his constitution.”

This gentleman recovered, married, and has a family; he is active, and able for a large amount of close office work. By his invitation I had an opportunity of making a careful examination, and I found plain evidence of there having existed at one time extensive disease. This is an encouraging case; others equally so I saw. In many hæmoptysis had been a frequent symptom, and recovery was often accompanied by the expectoration of cretaceous masses. A local physician has quite a collection of these calculi.

There exists a difference of opinion among the resident medical men whether phthisis originates in the neighbourhood among colonists born and constantly living there. One doctor, of long experience, affirmed that he never saw the disease so originate, while another could recollect having seen instances of the disease so developed. The latter opinion is more likely to be correct, for tubercular consumption is as wide-spread as the human race. What swells the number of victims in England is the large addition of cases originating in a cold; the damp, inclement air keeping up the irritation, and fostering the destructive changes in the lung. Accurate meteorological observations at Bloemfontein would be of much value, and they could be obtained were instruments available. The English sisters keep a register, but it is not sufficiently complete to be valuable. The air is remarkably dry. I have often seen a difference of 10° F. between the dry and wet bulbs. This

is due to the peculiar situation of the Free State. On the east Natal rises in terraces, and ends in the great Drakensberg range of mountains, thus completely intercepting the moisture from the Indian Ocean. On the north and west a vast expanse of dry country, and on the south stand the Stormeberg and Katberg Mountains. A spruit—i. e., a water-course—sometimes swollen into an impassable torrent, sometimes a dry river-bed, divides Bloemfontein into north and south sides. On the southern side the President and Bishop reside. The President's house is a substantial mansion, of good dimensions, and its present occupant (President Brande) is honoured and beloved by the people. Near the President's stands the English Cathedral, a neat little church; the services are conducted with solemnity and much taste; there is a surpliced choir, numerous and well trained. The southern side of the town has an abundant supply of water from a natural fountain, the northern side from wells. At last the time for leaving came, and I took post cart to the Diamond Fields to catch Cobb's coach for Port Elizabeth. On that journey, from Bloemfontein to the Diamond Fields, I experienced some of the inconveniences of post-cart travelling. The Modder River runs between, and, owing to rains, had risen high. We reached the ford; the river was then thirty yards wide, at the ford itself five feet deep, and on each side twenty or thirty, I was told. Some Dutchmen supporting each other crossed over to ascertain the depth. The mails must be got over if possible, and it was determined to cross. Eighteen oxen were yoked to the cart, and they, with much difficulty, crossed. Our safety was due to the fact that when some of the oxen were swimming, others were on ground; fortunately the ford was broad. We got over with no greater loss than one bag that was insecurely fastened. I stayed three days at the Diamond Fields, and went much among the diggers. Of one thing I was fully convinced, that Kaffirs and Hottentots can and will work as hard—aye, under that hot sun, harder, than any white man. The Kaffir has many admirable qualities; save in time of war, he is a peaceable, orderly citizen. Street brawls I never saw. What a contrast this with cities in civilised England. The use of the knife I never heard of; wife-beating I have known to occur, but never to the brutal extent one sees at home; and then the Kaffir is unenlightened, and his ideas of matrimony and the wife's domain are very different from ours; he works hard, and saves money to buy a wife, and then his labour is over; the customs are such that the wife then

becomes the drudge, and works to support her husband. Is dear old Britain free from such a custom? Alas! our police courts say no. This Kaffir custom is fast disappearing under the influence of civilisation; it materially affected the conduct of parents towards their children; the daughters were nourished and tenderly cared, for *en bon point* in the Kaffir woman is the husband's chief standard of comeliness; and as the father knew that through his daughters his herds would increase, he took pains to cultivate in them that quality most sought after. The husband received no dower; on the contrary, he paid his father-in-law for his daughter, often to the amount of twenty head of cattle. The sons of the family received different treatment; they became no source of aggrandisement, so to their lot fell a rougher usage.

The Kaffir holds peculiar views with regard to honesty. If placed in charge, during his master's absence, of the household goods, even including spirits and tobacco—his two weak points—he will faithfully keep them until his master's return; but then, if he find spirits or tobacco within reach, he cannot resist the temptation; food he will also take for his friends, if any live near. Hotel-keepers have told me that Kaffirs, as domestic servants, can be fully trusted, except in these particulars, and that money and jewellery may be left lying about with impunity.

If proof were needed that the absence of effective sewerage is a cause of dysentery and typhoid, a visit to the Diamond Fields of South Africa would convince the most sceptic. South African villages and larger towns, when sewered, are peculiarly free from these diseases; the excessive dryness of earth and air prevents putrefaction; but at the Diamond Fields 20,000 people live under canvas chiefly; there are no sewers or drains of any kind, the atmosphere is offensive, and dysentery and typhoid are rife.

In the month of May I commenced my journey from the Diamond Fields to the coast. May in Africa corresponds to November in England. But what a contrast was that first African winter month! One night I slept in the coach, the next in a canvas house; then we got into a more civilised country, where we found good inns at every stage. On the way down we passed through Jacobsdaal, Philipolis, Colesberg, and Cradock. This last town deserves attention; it is well built, situated in a rich country; it has a handsome square, and in that square a noble church built by the munificence of the people at a cost of £30,000. The town stands high (3,000 feet) above the sea; more than one consumptive

invalid told me that to his residence there he owed his recovery; the hotel accommodation is excellent; there are hot mineral springs of much local celebrity, and there is very fine scenery in the neighbourhood. A railway is in course of construction from Port Elizabeth to this place, a distance of 200 miles, and, when completed, the invalid will have ready access to Cradock; then, I am convinced, it will become a favourite resort, for it has many natural advantages.

We know that wherever mankind exists, phthisis exists also, but not to an equal extent in every country. The only agents in its production that we can point to, with any degree of certainty, are cold and moisture combined, and over-crowding.

Cold and Moisture.—In attributing consumption to a combination of cold and moisture, we can only go so far as to say that Great Britain is cold and damp, and that phthisis is its scourge; that Scotland is colder and damper than England, and that there consumption is more prevalent; that Canada^a is cold, but not damp, and that it enjoys a considerable immunity from the disease. In the year 1869 the mortality from phthisis in England was 2·41 per 1,000 of its population; in Scotland it was 2·67.^b The mean degree of humidity in England was 83%; in Scotland, 87%. During ten years (1863–72) the mean annual army loss by actual deaths in service was, in the United Kingdom, 2·77 per 1,000 men; in British North America it was only 1·19.^c If we include invaliding (for truly invaliding from phthisis means sending the soldier to die amongst his civilian friends), the military loss at home amounted to 8·85; in British North America, to 4·60 per 1,000 men. Concerning this combination of cold and moisture, Dr. Mattocks shows, from the census returns of the United States, that “cold and moisture combined develop consumption fearfully where there is a predisposition, and without it in many instances; but break up, as it were, this deadly combination, and we remove the fangs of predisposition.”^d

On the other hand, it must be observed that in Australia, which is a dry, warm country, the army loss from phthisis, during the last ten years of its occupation of that country, was greater than at

^a It is a remarkable fact that Canada bears a high reputation as a sanatorium for consumptives during its keen, dry, frosty winter, but that the thaw season has a deadly effect on this class of invalids.

^b Registrar-General's Report of (Scotland) 1869.

^c Army Medical Department Reports.

^d Quoted by F. H. Welch, F.R.C.S.E., in *Alexandra Prize Essay on Consumption*.

any other station; the mean annual death-rate was 4·80 per 1,000 men, without including invaliding.*

Overcrowding.—All writers agree that this is a material cause of phthisis; the greater prevalence of the disease in the densely-populated towns prove it so. It has been shown that, in former days, scrofula and phthisis—closely allied diseases—spread their ravages through our public institutions until the inmates got more breathing space.† “Of 104 compositors who worked in rooms of less than 500 cubic feet for each person, 12·50 per cent. had had hæmoptysis; of 115 in rooms having 500 to 600 cubic feet, 4·35 per cent.; and of 101 in rooms of more than 600 cubic feet, 1·98 per cent. had suffered.”‡

In 1871 the ratio of deaths from phthisis to the population of England was 2·36 per 1,000; “extra-metropolitan” Kent lost but 2·00 per 1,000, while Liverpool lost 3·53.§ In 1869 the rate of mortality from this cause in the “mainland rural” districts of Scotland was 2·16 per 1,000; in the eight chief towns it was 3·41.¶ In 1872 Glasgow lost 3·94 per 1,000 of its population from phthisis.¶ Glasgow contains about 500,000 people, and of this number 1,900 die annually of consumption; but of 500,000 living in rural districts, only 1,100 fall victims to the disease. What an amount of poverty this one disease must produce, and what a loss to the nation it must cause—a loss not merely due to the support of a man dying from a lingering illness, but to the fact that that man for a long time previously—while the disease was incubating—was unable to do the work of a healthy man. He, poor fellow, was a drone in the hive.

“Although on the Alps phthisis is arrested in strangers, in many places the Swiss women on the lower heights suffer greatly from it. The cause is a social one—the women employed in making embroidery congregate all day in small, ill-ventilated, low rooms, where they are often obliged to be in a constrained position. Their food is poor in quality. Scrofula is very common. The men who live an open-air life are exempt; therefore, in the very place where strangers are getting well of phthisis, the natives die from it.”§

* Army Medical Department Reports.

† Carmichael on Scrofula.

‡ Quoted by F. H. Welch, F.R.C.S.E., in *Alexandra Prize Essay on Consumption*.

§ Report of Registrar-General (England) for 1871.

¶ Report of Registrar-General (Scotland) for 1869.

¶ Report of Registrar-General (Scotland) for 1872.

§ Practical Hygiene. By Professor Parkes.

Dr. Pollock, after reviewing the occupations and their attendant conditions of 5,627 patients treated at the Brompton Hospital for consumption, says:—"Deficient ventilation and crowded apartments are eminently productive of tubercular disease."^a

There are grounds for the belief held by some that phthisis is communicable from the sick to the healthy. Dr. Wilson Fox has produced the disease in the lower animals by inoculation. How often do we see husband and wife die of consumption—the one of a noted consumptive family, the other of as notably a healthy one. Dr. Walshe^b cites instances of husbands who, having constantly nursed consumptive wives, became affected themselves, but recovered when their duties as nurses ceased to be required; but he also truly remarks that we now and then see husband or wife lose more than one consort by the disease, yet remain unaffected. The same, however, may be said of typhus. How many come in contact with it and escape; yet who would say that it is not infectious?

If, then, we accept this doctrine of the infectiousness of phthisis—and it is tenable^c—we have another obvious solution of the spread of the disease in overcrowded dwellings. The exhaled breath of the phthisical soon forms a considerable part of the air to be re-breathed, and thus is conveyed to the lungs of the other occupants of the room. Now, even if it do not specifically cause phthisis; it is poisonous from its surcharge of animal matter. Men have died from exposure to air so surcharged, and its continued inhalation in too small quantities to kill outright is well calculated to be followed by a low chronic form of inflammation of the lung substance, ending at last in lung destruction. We know irritants have this power.

Heat and Moisture.—In one country with these conditions consumption is of frequent occurrence; in another it is not so. New Zealand's north island and Malta, both damp countries, and both warm, have low death-rates, while the loss in China has been considerable. The mean annual army loss in New Zealand from phthisis during the last ten years of its occupation of that country was (not including invaliding) 1·80 per 1,000; in Malta 1·05; and

^a Elements and Prognosis in Consumption. By J. E. Pollock, M.D.

^b Walshe on Diseases of the Lungs.

^c After weighing carefully the evidence for and against the infectiousness of phthisis, Dr. Walshe says:—"Nevertheless, while allowing their full weight to these objections, I must confess my belief in the reality of such transmissibility has of late years strengthened. I have now met with so many examples of the kind that 'coincidence' becomes itself an explanation difficult of acceptance."

in China 2·81.^a The mean degree of humidity at Auckland for the year is about 75 (saturation point being represented by 100), and at Malta 74.^b

Dry Cold.—Some authorities hold the opinion that neither great cold nor great heat is injurious to the consumptive, provided moisture is not also present. Hammond confirms from his own experience that a very dry atmosphere is most conducive to the prevention of the disease and to its cure in its incipient stage, and this though the cold may be great in winter and the temperature high in summer. He prefers a “dry equably low temperature as bracing and tonic.”^c

The statistics of the army stationed in British North America bear testimony to the correctness of this opinion, for during ten years (1863–72) the mean annual loss by actual deaths in service was only 1·19 per 1,000 men. Few, if any, countries are subject to as great extremes of heat and cold as North America; but there is a feature in the Canadian and South African climates which is not present in the British. The former are very dry; the mean degree of humidity for both countries is 65,^d while in England it is 83,^e and in Scotland 87.^f The distinguishing feature of the South African and Canadian climates, however, is that they are drier in winter than in summer. The British climate, at all times moist, is most so in the cold weather; so that while the former climates are becoming drier with the winter, the humidity of the latter is increasing.

Hammond, as I have before quoted, prefers for the phthisical invalid a “dry equably low temperature as bracing and tonic.” Such a climate may be suitable to some, and very probably is, judging from the army statistics; but can any physician who has witnessed the contracted features, the livid skin, and irritable cough of some consumptives under the influence of cold doubt that such an atmospheric condition is highly injurious to them? I have known, too, the keen cold of frosty weather to produce indigestion and loss of appetite, which the constant cough fosters.

^a Army Medical Department Reports.

^b Army Medical Department Report for 1868. See Meteorological Observations, Table V.

^c Review of Hammond on Hygiene, with Special Reference to Military Service, in Medico-Chirurgical Review, April, 1864.

^d Army Medical Department Reports.

^e Glaisher in Report of Registrar-General (England) for 1871.

^f Report of Registrar-General (Scotland) for 1872.

In British North America the mortality from phthisis is low, but from pneumonia it is high. The mean annual loss from this latter cause during ten years was 1·00 per 1,000 men; in South Africa it was only 0·53 per 1,000.^a Is it not possible that the weak-chested are carried off in this way?

We know that tubercle may exist, and cause the patient so little inconvenience that for a long time he attends to his duties and seeks no aid. In this state pneumonia may attack him, and he succumbs to such an illness as a healthy man would rally from. Such an inference may be unjust; yet the physician would hesitate to advise a consumptive to resort to Canada for relief except under peculiar circumstances.

Dry Heat.—Under this condition, as under that of moist heat, we find in one country consumptives abound, and in another they are rarely seen. South Africa is not favourable to the development of the disease; Australia is extremely so, judging in both instances from army statistics, for during ten years in South Africa and St. Helena the mean annual mortality per 1,000 men was 1·57,^b and in Australia, as we have seen, it amounted to 4·80;^c yet both countries are hot, both have dry climates, and both wide ranges of temperature.^d

Variable Temperature.—This has been considered an unfavourable condition, and no doubt is if the temperature sink low and be accompanied by damp; but climates having wide daily ranges, wide yearly ranges, and a dry atmosphere, do not seem to be hurtful.

Struggle of Life.—This, too, has been assigned as a cause, and, writing of the serious increase of phthisis in Australia, Dr. Walshe says:—“ This increase in the amount of destruction by phthisis, it seems to me, probably depends on the growing difficulty of the struggle for existence in the colony, and the gradual assimilation of colonial habits and occupations to those of the mother country; the gradual approximation to the great town system, whereby the superior qualities of the climate as originally experienced have gradually been nullified.”^e

^a Army Medical Department Reports.

^b St. Helena is included in these statistics. Whether it increases the mortality percentage, I cannot say; but Dr. Williams's report of patients sent to these ocean climates (St. Helena, Canaries, &c.) is not favourable. See *Med. Chir. Trans.* Vol. LV.

^c Army Medical Department Reports.

^d South Africa, although it has high day temperatures, in summer has cool mornings and evenings.

^e Walshe on Diseases of the Lungs.

The statistics of England are against this view. What country has so overpeopled itself as England has? In what country is competition so keen, or do men work so hard? Yet phthisis is gradually, though slowly, on the decline, as the following figures will show.

TABLE I.—*Showing mean annual ratio of Deaths from Phthisis in England per 1,000 of the Population during following periods.**

5 Years 1850-54	5 Years 1855-59	5 Years 1860-64	5 Years 1865-69	1870	1871
2·81	2·64	2·56	2·52	2·43	2·36

I doubt if Australia was ever a favourable country for consumptives; the army statistics certainly do not show it in that light. The first emigrants to a country are generally picked men in physical vigour, healthy in mind and body, and the country gets a good name, but in this instance it did not stand the test of time.

Each Climate is not suitable to all Constitutions.—In Jamaica during ten years (1859-68) the black troops lost annually by death in service from the disease under consideration 6·81 per 1,000 men; the white troops only 1·74 per 1,000.^b The black troops of the "Windward and Leeward command" (Barbadoes, Trinidad, St. Vincent) during the same period had an annual loss of 7·01 per 1,000, and the white troops of the same command 1·67. On the other hand, during the same period in Ceylon the black troops lost only 1·33 per 1,000, while the white troops lost 2·81; and in China the Asiatic troops lost but 1·10 per 1,000, and the white troops 2·81.^c Thus we see that in one country where the white troops are comparatively free, phthisis spreads its ravages amongst the coloured, and in another the native troops seldom succumb to the disease, but the white troops frequently do.

In further support of this I may again allude to two gentlemen whom I saw in the Cape colony. Both had tried other climates without benefit, but recovered in South Africa; and one of them, when he first resorted to the country, accepted an appointment at a sea-coast village, but after some months, finding that he was becoming worse, he removed to an inland town of considerable altitude, and soon his convalescence commenced. It is remarkable that in Britain we send consumptives to watering-places, and in Africa they are sent from them.

* Report of Registrar-General for England for 1871.

^b Army Medical Department Reports.

^c Army Medical Department Reports.

Hill Climates.—There are diverse opinions, not on the value of the hill climate, but on the necessity for it, some physicians contending that a climate which will permit the patient to live continually in the open air is equally effective. Professor Parkes says:—"It would seem possible that, after all, it is not indeed elevation and rarefaction of air, but simply plenty of fresh air and exercise which are the great agents in the cure of phthisis."^a And, again, in another place:—"Scrofula and consumption have been long known to be rare among dwellers upon high lands, and the curative effects on these diseases of such places is also marked; but it is possible that the open-air life which is led has an influence, as it is now known that great elevation is not necessary for the cure of phthisis."^b

There is, however, conclusive evidence in support of the hill climate. The African experience is strongly in favour of it. Peru, too, furnishes decisive evidence in its support. Can there be more favourable testimony than the following?—"Incipient tubercular phthisis, usually attended with more or less hæmoptysis, is one of the most common pulmonary affections known in Lima and other parts of the coast of Peru. It is, besides, a disease almost certainly curable, if taken in time, by removing the coast patient so attacked to the open inland valley of Jauja, which runs from ten to eleven thousand feet above the sea level. . . . I have myself sent patients from the capital to Jauja in a very advanced stage of phthisis, with open ulcerations and well-marked caverns in the lungs, and seen them again after a lapse of time return to their homes free from fever, and with every appearance of the disease being entirely arrested. But in many such instances it would, after a protracted residence on the coast, again become necessary to return to the mountains to prevent the recurrence of the malady."^c

"Dr. Fuentes states that the proportion between cured and the total number of patients in all stages of pulmonary consumption sent to Jauja amounts to 79·5 per cent.; and in view of so important a general result to the patients from the capital, where the Indian soldier is singularly prone to phthisis—a disease almost unknown in his native hills—the Government has of late years—

^a Parkes on Practical Hygiene.

^b Parkes on Practical Hygiene.

^c Climate of the Swiss Alps and Peruvian Andes Compared. By Archibald Smith, M.D., in Dublin Quarterly Journal of Medical Science, 1866.

in 1860—initiated a military hospital, for consumptive patients from the coast and capital in particular, in the vale of the Jauja."^a

On the plains, then, we find that the people are very subject to phthisis; in the mountain towns of the same country the disease is seldom seen. Take the already consumptive men from the plains to the mountains and they recover. Mountain climates, when the elevation is not too great, produce a "very marked improvement in digestion, sanguinification, and in nervous and muscular vigour."^b Any agent which will improve the digestion and assimilation of food in the consumptive invalid must be beneficial.

Dr. Weber adds his testimony to the decidedly beneficial effects of high elevations.

Staff-Surgeon Kellet, writing on the climate of Landour, which is situated on the lower Himalayan ranges, 7,500 feet above the sea, says:—"When those affected with phthisis go there they almost invariably improve, and often recover."^c Of 29 phthisical patients treated at Landour, 6 recovered, 4 were much improved, 12 were improved, 6 were not improved, and 1 became worse; 13 were able to return to duty. Here, again, the men contracted phthisis on the plains, and a considerable proportion recovered at the mountain sanatorium. Nearly all of the 29 patients were affected with other diseases—such as dysentery, ague, hepatitis, splenic disease, jaundice, &c.; taking this into consideration, the results are most encouraging.

At present our soldiers (and we have the bravest and most faithful soldiery in the world) when consumptive are sent home to a certain death, for recovery under the influence of British climate rarely occurs. It would serve a double purpose were Government to establish mountain sanatoria for the prolonged residence of invalid soldiers; it would render a just and well-merited service to the soldier, and it would elicit most valuable information for the benefit of mankind. I have but to mention the fact that in England alone 60,000 die every year from consumption to show what a boon would be conferred were a place found where some of these people could live and be useful to themselves and mankind at large.

Moist Soil.—Concerning this cause Professor Parkes says:—

^a Ibid.

^b Parkes on Practical Hygiene.

^c Army Medical Report for 1871.

"In some way which is not clear a moist soil produces an unfavourable effect on the lungs; at least in a number of English towns which have been sewered, and in which the ground has been rendered much drier, Buchanan has shown that there has been a diminution in the number of deaths from phthisis. Dr. Bowditch, of Boston (U.S.), and Dr. Middleton, of Salisbury, noticed the same fact some years ago." "At Ely, by improved drainage causing drying of the soil, the annual mortality from phthisis was lowered 47 per cent."^a

In this respect South Africa stands in a pre-eminently favourable position. The soil is sandy and porous, rain falls but seldom, and then quickly percolates through; the loose porous nature of the soil is evidenced by the habitually dry surface of the ground, even soon after heavy rain, and by the high banks and deep beds of the rivers. There is an exception in some parts of the country known as the *Karoo Veldt*—I hope the spelling is orthographic; it is, at least, in accordance with the sound. It has been ascertained that sand absorbs very little water, that *humus* or common surface soil absorbs 40 or 50 times as much, and that sand possesses little retentive power, readily permitting permeation and evaporation to take place; this and the dry air account for the infrequency of fogs so hurtful to weak chests.

British science and money can remove the excessive moisture from British soil, but the cold damp winter climate will remain.

Occupations and Phthisis.—In our anxiety to find the causes of events, do we not sometimes, without sufficient reason, attribute diseases to occupations which are harmless in themselves? We hear of individual cases being ascribed to "long working hours," "bending posture," "tight lacing," "intemperance," &c.; and it has even been stated that the frequent occurrence of the disease amongst the New Zealanders is due to their abandoning esculent roots for potatoes! Such statements can but serve to throw discredit on the ability of their authors to investigate causes or to estimate the value of evidence.

Occupations are most frequently healthy or unhealthy, from the condition of the atmosphere in which they are carried on. Some years ago I had frequent opportunities of investigating the disease produced in "potters" by the mechanical irritant—mineral dust—to which they are subject; in no respect save cough, and some

^a Parkes on Practical Hygiene.

^b Dr. P. W. Latham (Cambridge), *Lancet*, June 12th, 1875.

wasting towards the end of its course, could I find any resemblance to consumption; the pathological appearances were very different. ^a I speak of the disease as I frequently found it in men who had not a scrofulous or tubercular diathesis. This disease has very materially decreased in those workshops where precautions have been taken to remove the dust from the air.

Climate—whatever may be its essential properties—is an all-powerful agent in the prevention or production of phthisis; the percentage of soldiers who annually fall victims to this disease in the United Kingdom is nearly double that of those cut off by the same disease in South Africa; and if we assume that the same would be the relative mortality ratio between civilians living in England and those living on the lower grounds in South Africa, it means that of the 60,000 who annually die of consumption in England, 26,000 would, in all probability, have been saved had they lived in South Africa; and we are warranted in taking a still more favourable view of the subject as regards the hill districts.^b

Phthisis seems to have its favourite haunts, as leprosy and other diseases have theirs, though its boundary lines are not so well defined, nor is it so exclusive in its selection. As yet the climatic treatment of the disease is in its infancy, but it is quite clear that consumptives should not be sent indiscriminately to any reputed resort. As some indication of the climate suitable to the different forms of the disease, Dr. Williams says:—"It would appear that a warm and dry climate is more successful in the treatment of phthisis of inflammatory origin than a warm or cold moist one;" but that "warmth and equability of climate are more important than dryness for patients suffering from phthisis of catarrhal origin."^c Has this last statement been verified by further experiences? I know from actual observation that damp warm weather produces catarrh in many people, and in general has an enervating effect.

South Africa.—I have a strong feeling in favour of this country, possibly because I know it; but even that is a testimonial, for how often, on examination, do we find that, concerning climates as concerning other things, we have been building castles

^a Dublin Quarterly Journal of Medical Science, 1871.

^b In this calculation I do not take into account how far the injurious effects of overcrowding would affect the beneficial results of the climate.

^c Med. Chir. Transactions, Vol. LV.

in the air. I know what good has been effected in it.* Europeans who have resided in Cape Colony speak highly of its climate, yet the colonists themselves consider the Free State much superior, and send their invalids there, and the Free State folk, again, think some parts of the Transvaal *quite equal* to their own country—perhaps that means *superior*, for the Bloemfontein people are not a little proud of their climate; undoubtedly the Transvaal is still higher ground than the Free State, some of its towns being 6 to 7 thousand feet above the sea. A recent writer in the *Times* says if he had the choice of a climate he would select that of the Transvaal.

The high ground of South Africa is the place favourable to the consumptive, but the military stations are on low ground, as Cape-town, Port Elizabeth, King William's Town, &c., so that the army statistics do not give a fair criterion of what the Free State or Transvaal can effect. My own favourable impression is based on my own experience and on trustworthy information from others.

I have said that Europeans who have been in the colony praise its climate. Surgeon Sedall, who was stationed at Grahamstown, says:—"There is a comparative immunity from bronchial affections, and, except amongst the native population, who are insufficiently clothed and badly fed, phthisical complaints are very rare."^b When travelling through the country I took much pains to ascertain from colonists with whom I came in contact (merchants, farmers, inn-keepers, &c.), if they had known of instances of phthisis occurring in their own families or amongst their friends, and I learned from this source of only two families in which it had occurred—one had been almost annihilated by it. I presume it was hereditary tuberculosis; from physicians I heard of some more. Dr. Walshe says:—"In one of the most remarkable instances I have known of complete suspension of (hæmoptoic) phthisis, and restoration to hopeful and energetic life, the recovery took place at Maritzburg."^c It is unnecessary to multiply evidence.

* It is but right to give the other view of the case, though it stands in bold relief in opposition to all other evidence with which I am acquainted, and is opposed to the general opinions of the colonial physicians. It is from the article on climate in *Nouveau Dictionnaire de Médecine et de Chirurgie Practiques*:—"La phthisie y est assez commune, et suivant les docteurs Roux et Chiappini elle marche rapidement vers sa terminaison funeste chez les étrangers qui en ont apporté le germe dans le pays."

^b Army Medical Department Report for 1869.

^c Walshe on Diseases of the Lungs. I may add one more opinion, coming from so competent an authority as it does. Dr. Williams (*op. cit.*) says:—"In conclusion, I may remark, that the superiority of dry, bracing climates over moist, relaxing ones

Let us now inquire how the invalid can be engaged, either in amusement or for profit. I have said before that such a sea voyage as that to the Cape is of the utmost use to the invalid; he lands in improved health. If the invalid have ample means, and be a sportsman, the time will never pass slowly; he should leave the coast and travel by coach first to Cradock or Aliwal North; at both places he can get good accommodation, and with his horse and gun he will soon improve his appetite and strength; he can afterwards travel further into the interior, or let him start from Port Elizabeth with the first tented waggon; let him lay in a stock of good things for the way, and provide himself with a horse, and he will often find a "spring-buck" or "blesbuck," or some large feathered game. A Cape horse will feed on what he picks up by the way. If the invalid be no sportsman, he should get a riding horse; there can be nothing worse for him than lounging about an inn.

What can the man of moderate capital do? He should first take a holiday until he has regained strength—not an idle holiday; if he be a man of any worth, such a holiday would injure him, but let him not enter into any definite business arrangements; he can "look about him;" the farmers and colonists generally will give him a welcome and good information; he will be all the better for travelling about amongst them. When he is able for work he will find that in the Cape Colony he can take to sheep farming, ostrich farming, or wine growing; and in Natal, in addition, to coffee and sugar planting, if he find that a hot climate agrees with him, for the Natal coast climate (the coffee and sugar region) is hot.

Many farmers are also transport riders, and, if fortunate with their cattle, make well by it. The farmer has his farm midway between the seaport and some inland town, to which he trades; on this farm he keeps his sheep, but it answers another purpose; one half of his transport oxen are kept on it, and he exchanges teams when he arrives at it. A transport rider, making long journeys of 400 or 500 miles, will have for each waggon two teams of oxen, and he may own four waggons; consequently he will have 8 teams of 16 oxen each.

Both sheep farming and ostrich farming are profitable—the latter,

has long been recognised and acted upon by many physicians, but that the desertion of the latter has been attributed to the caprice of fashion. It has been my endeavour to show that this is not so, and that the treatment of phthisis by dry climates is founded on well-ascertained results."

especially, has the reputation of being so, but a practical knowledge is necessary in this, as in everything else, to ensure success. Those who wish to learn what might be their prospects from coffee or sugar planting will find valuable information in Dr. Mann's Guide to Natal.

Railways have been for some years running between Capetown and Wellington, and between Capetown and Wynberg. Now they are being made between Port Elizabeth and Graafrinet, Port Elizabeth and Uitenhage, Port Elizabeth and Cradock, and between Capetown and Malmesbury. The Transvaal Government contemplate making a railway from Delagoa Bay through the Transvaal Republic; this would place what possibly is the finest climate in the world within easy access of Europeans.

Seeing then that our own climate fosters consumption, are we justified in treating a patient at home if we see him in an early stage of his illness and can induce him to go abroad? I think not, with one exception, and that is where the disease is running a rapid course, and is attended with fever. Drugs and artificial hygienic arrangements can but palliate and stay the fatal issue for a few weeks or months. Is it a real benefit to the patient to prolong his illness when there is no hope of recovery?

We have seen that the chief factors of consumption are overcrowding or insufficient fresh air and cold with moisture. Can these conditions be obviated in England? Does the rich invalid in his room, large though it be, with good fire, and every crevice stopped up to keep out the damp cold, get that free supply of balmy air which is necessary to heal his lungs? Does the frail, sickly girl who goes for her daily drive in close carriage, with windows up, and hot-water footstool, get fresh air? Oh! if either could be transported to those Bloemfontein heights, 5,000 feet above the sea, how different would their sensations be under the influence of that warm sun, and that exhilarating air wafting over them—where the exhaled breath blows past, not to be rebreathed.

This is one of the grand secrets of the power of such a climate as the South African over consumption; life can be continually spent in the open air—the invalid can sleep in it—there is no malaria to be dreaded. My imagination carries me back to the feelings of pleasure and lightness I had when ascending higher and higher those Bloemfontein heights, yet the journey was long and the country uninteresting; and again, another recollection comes vividly before me—it is of a visit to a friend who lived in a canvas house, and it is

of the pleasure I experienced when going to sleep in my canvas bed-room, the air wafting gently about me, and of those feelings of freshness on awakening in the morning.

Upon those who may determine to give the South African climate a trial I would strongly impress that they should regularly and constantly take cod-liver oil; that if they travel by waggon, it should be tented; that they should never sleep on the ground, though their healthy companions may do so with impunity; and that they should be well supplied with flannel underclothing, both for day and night wear. They should not become despondent, if improvement in their health do not at once commence.

TABLE II.—*Showing the Admissions, Deaths, and Invaliding from Phthisis amongst Troops at Home and Some Foreign Stations during the ten years, 1863-72—mean annual ratio per 1,000 men.*

	Home Stations	Cape of Good Hope and St. Helena	Gibraltar	Malta	British North America
Admissions	12.75	8.79	8.62	8.07	7.27
Deaths	2.77	1.57	1.13	1.05	1.19
Invalided	6.08	3.51	4.72	3.91	3.41
Total of Deaths and Invalided	8.85	5.08	5.85	4.96	4.60

The above statistics were taken from the Army Medical Department Reports for ten years (1863-72). They show the Cape Colony in a slightly unfavourable position compared with Malta and British North America, but it must be remembered that the military stations are on the lowlands, whereas the health resorts are on the mountain plateaux; besides, the statistics for St. Helena cannot be separated.

TABLE III.—*Showing Admissions and Deaths from Phthisis amongst Troops at some Foreign Stations during ten years—mean annual ratio per 1,000 men.*

	1863-72			1859-68								
	Bengal	Madras	Bombay	Australia and Tasmania	New Zealand	Bermuda	Jamaica		Ceylon		China	
							White Troops	Black Troops	White Troops	Black Troops	White Troops	Black Troops
Admissions	9.42	12.40	9.03	15.2	8.0	12.3	9.8	21.8	17.4	2.8	14.3	3.8
Deaths	1.68	1.41	1.41	4.80	1.80	2.28	1.74	6.81	2.81	1.33	2.81	1.10

The separation of the invaliding statistics for Australia and Tasmania from those for New Zealand during the whole of the ten years, 1859-68, is not practicable, and leaves the conclusions I have come to open to the objection that, although more men fell victims to phthisis at the Australian stations, a smaller percentage was invalided owing to the great distance between that colony and England. I find, however, that the invaliding amongst troops in Australia and Tasmania has been reckoned as a separate item during the four years, 1861-4, and as the average admission and death-rates during the same period correspond very closely with the mean numbers for 1859-68, it is reasonable to suppose that the death-rate of invaliding during those four years will give a just idea of the average rate of invaliding for the longer period.

In Australia and Tasmania during the four years, 1861-64, the average yearly admissions from phthisis amounted to 16·97 per 1,000 living, the deaths to 4·89, and the invalided to 4·57.

Dr. Walshe (*op. cit.*), on the authority of Mr. W. Thompson, states that at Melbourne and its vicinity phthisis is steadily on the increase amongst the civilian population, having risen from 2·08 per 1,000 in 1866 to 2·52 in 1869. Unfortunately, the figures of the Registrar-General for Victoria also confirm the accuracy of the army statistics (essay on "Progress of Victoria," by Registrar-General for Victoria, in "Official Record," Melbourne, 1873).

It has been said that the Australian climate very closely resembles that of South Africa. What, therefore, is the cause of this great difference in results? Both are subject to high temperatures and considerable ranges—both are looked upon as dry climates, but there is one difference, and it is a very important one, and bears closely on what has been advanced already as a more than probable cause of phthisis; it is this—the Australian climate is very dry during the hot months of summer, but it is damp during the cold winter months—so damp that 81 represents its mean degree of humidity during the two coldest months, June and July—two months when the thermometer falls occasionally below freezing point, or, what is much worse, to a few degrees above that point. There is a general belief amongst those most competent to form an opinion, that no cold is so injurious as a damp cold, when the thermometer registers 33° or 34° F. Such is the state of the Australian winter climate, and very different it is from the condition of the South African.

TABLE IV.—Meteorological Observations at Fort Napier, Natal—Latitude, 29° 3' S.; Longitude, 30° 2' E.; Height above Sea, 2,200 feet.*

Month	Mean Readings of Barometer reduced and corrected to 32°	Temperature of the Air.				Mean Daily Readings of Hygrometer		Mean Degree of Humidity in a Cubic Foot of Air	Number of Days on which Rain fell	Amount of Rain-fall on Ground
		Highest during Month	Lowest during Month	Mean		Dry Bulb	Wet Bulb			
				Of all the Highest	Of all the Lowest					
January - -	27·516	99·8	48·0	79·5	56·3	72·0	66·5	71·5	15	3·36
February - -	27·553	100·0	48·7	82·9	57·7	74·5	67·7	66·8	9	1·16
March - -	27·526	95·0	53·0	82·8	57·6	74·6	66·9	63·2	17	6·29
April - -	27·581	87·1	48·0	73·9	54·2	67·0	62·9	68·5	16	8·00
May - -	27·595	86·5	40·0	72·5	47·3	64·9	56·3	56·6	7	1·47
June - -	27·737	78·0	31·7	68·4	39·9	58·8	49·1	50·2	5	0·23
July - -	27·715	82·6	30·5	67·3	40·1	58·3	50·0	55·8	4	0·49
August - -	27·598	95·0	34·5	75·9	46·1	66·4	55·4	48·4	3	0·20
September -	27·639	90·0	40·1	72·0	49·3	64·6	58·0	64·6	14	3·54
October - -	27·553	99·0	46·0	77·9	54·1	68·6	63·4	72·0	17	3·19
November -	27·511	92·6	46·0	76·0	53·0	68·1	61·5	65·6	21	7·84
December - -	27·490	94·0	50·0	81·1	57·1	71·4	67·2	77·0	22	4·46
Yearly Means and Totals }	27·584	91·6	43·0	75·8	51·1	67·4	60·4	63·2	150	40·33

TABLE V.—Meteorological Observations—mean for year 1868.

Station	Height above Sea in Feet	Mean Reading of Barometer reduced and corrected to 32°	Temperature of the Air				Mean Daily Readings of Hygrometer		Mean Degree of Humidity in a Cubic Foot of Air	Amount of Cloud, 0—10	Number of Days on which Rain fell	Amount of Rain-fall on the Ground
			Highest during Year	Lowest during Year	Mean		Dry Bulb	Wet Bulb				
					Of all the Highest	Of all the Lowest						
Malta -	111	29·875	92·4	42·9	71·1	61·6	68·2	63·3	74·2	4·8	108	25·79
Auckland	140	29·865	87·0	31·9	68·5	47·8	61·3	56·9	75·7	6·9	192	48·82
Quebec -	230	29·780	97·7	11·9	49·4	29·1	40·3	36·0	64·7	6·2	84	25·20
Aldershot Camp -	325	29·562	93·8	19·4	60·8	42·7	54·6	50·2	74·8	7·2	149	30·92

* From Army Medical Department Reports for 1872.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Clinical Lectures and Essays. By SIR JAMES PAGET, Bart., F.R.S. Edited by HOWARD MARSH. Pp. 428. London: Longmans, Green & Co. 1875.

THIS volume consists of a collection of lectures and essays which have from time to time been published in various journals by Sir James Paget. We commend the course which some of our most distinguished brethren in the profession have followed in this respect. It is eminently right that their larger experience and its fruits should be placed at the service of their less fortunate fellows for their information and guidance. It is not always an easy matter to make references to the stray journals, in which valuable communications may often be buried, and it is, therefore, a cause of satisfaction to find them gathered together in this manner.

This observation, of course, refers not to all authors, for a great deal of what is sent out, even in books, had better be forgotten. But it has a forcible bearing in regard to such a man as Sir James Paget, who has long since earned an honourable position in the profession. These essays bear the impress of a well-trained mind. They are the results of a lengthened observation under the most favourable circumstances, made in the true philosophic spirit, and are written with a finish of style which is not the least of their attractions.

One of the most interesting is that on "The Calamities of Surgery." There are few operators who have not had, very early in their career, painful experience of these misfortunes. Frequently they are quite inexplicable; but, with growing observation, it will probably happen that we shall be able to take some of these fatal cases from the category of "accidents," and classify them under distinctly preventable causes. It is all the more important that the history of the patient should be carefully examined into, because the most trivial operations are sometimes attended by death. Thus Sir J. Paget mentions a case in which a small cyst was removed

from a man's head. Erysipelas set in, and he died. "And then it was found that he had albuminuria, a condition which made him so liable to erysipelas, or to pyæmia, or to some form of blood-poisoning, that if it had been ascertained beforehand, no prudent surgeon would have thought of operating."

In a number of rules which he lays down for guidance he places special stress on the attention to details of the operating surgeon.

"Among the cases that I have to regret is one in which a patient of mine died from a piece of plaster being put on in the wrong 'direction.'"

Here is one which ought to be carefully observed:—

"Do not be too ready to operate in your own houses, or in your own rooms. It is a thing too commonly done, and always involves a risk, which should not be incurred without need. Mr. Thomas Blizard, who was in his time one of the most distinguished surgeons in London, when he began to practise in the city, was once consulted at his house by a merchant of great wealth and influence, who thought he would patronise the young man, for he knew his family. He called on Mr. Blizard one morning, showed him a cyst on his back, and asked him to remove it, and he removed it then and there. The merchant went away, caught cold, had erysipelas, and died in ten days. I do not know what amount of unhappiness the case excited at the time, but I know that Mr. Blizard told it in after-life with the greatest regret, and that, as a measurable amount of part of the calamity to himself, his income fell 50 per cent. after that year, and was not quickly recovered."

There is a short paper on "Stammering with the Urinary Organs." The affection is a strange one, and several most curious instances are here collected. There is no stricture of the urethra, but the patient "cannot pass a drop of urine," or, after a few drops, there comes a painful check, and the more he strains the less he passes; and then complete retention may ensue, and overfilling of the bladder.

"One patient told me that, although he could usually pass urine well, yet there was one person with whom nothing could induce him to walk, because once, when he was with her, he wanted to pass urine, retired, and failed. His experience of the effects of the association of thoughts made him sure that if he were again in the same circumstances the same distress would come on him more intensely. . . . Another patient has described himself as driven to all kinds of devices to bring about the association of ideas, or of actions, with which he best succeeds in

emptying his bladder. He must walk up and down his room, and stand, or sit, in some customary singular posture, and then be very careful not to direct his mind either too much or too little to what he has to do, and then to let the urine run as inconsiderately as he can."

We know a case in which a gentleman is unable to pass urine while in a boat, but succeeds the moment he sets foot on the shore. The treatment is "to try to educate himself to a calm control of muscular power," and especially, the patient "should learn to use a catheter, not only that he may thus relieve himself in case of absolute need, but that he may be free from the enervating dread of helpless retention."

A series of lectures on "Nervous Mimicry" (neuromimesis) will demand a very careful reading. Sir James Paget here deals with that form of nerve-disease in which other affections are imitated so closely as to deceive the most careful surgeon. He refuses to apply the term hysteria to these cases—

"To patients and their friends the maladies may be said to be due to extreme nervous sensibility; or if they also prefer Greek, we may call them hyperæsthetic or hyperneurotic—anything but hysterical."

To add to the ordinary difficulties of clinical work, we find this strange influence turning up in the most troublesome ways. Tumours are imitated, joints swell, the tissues near joints waste, spines become curved, the patients are paraplegic, and all kinds of pains may find their counterparts in the subjects of this mimicry. It is, perhaps, as well to remember that it is not to be regarded as a sham disease, although there may be deliberate deception. In many cases the real cause seems to be what we may call a weakness of volition, or even an absolute inability to will.

"In other instances the patients are like children, who almost involuntarily imitate diseases—for instance, in stammering, limping, and so on. . . . And in the frauds which some of these patients practise I am nearly sure that the fault is rather in weakness of the will than in perverse strength."

It is very hard to lay down definite rules for the detection of these cases; but the knowledge that they are not infrequently to be met with should serve to make us watchful. Paget has made some observations which may be borne in mind. The subjects of the disease are generally liable to variations in the circulation, heat

and cold succeeding one another in the same part. The mind is not of the average level—is good or bad, higher or lower, than the average. “Egotism has its keenest life at and about the supposed seat of disease.” In the case of joints and some other parts temperature will be found an excellent guide, although increase in this may also be imitated.

“But if a patient be ready to scream when the accused joint is touched, and the joint is not over-warm, and the patient not feverish, you may be nearly sure of neuromimesis; and more nearly still, if the pain be rather in the parts outside or about the joint, than in the joint itself, so that a gentle touch is said to hurt as much as a hard one, or a pinching of the skin as much as pressure on the joint itself.”

The good to be derived from treatment does not seem much. But, at all events, the recommendations may be summed up thus:—General narcotics do more general harm than local good. Try local applications, such as hot spongings, followed by frictions with solutions of opium, aconite, or belladonna. If there is another constitutional condition existing with the neurosis, treat it. And for the nervous system, the best thing to do is to secure its full nutrition, “by means of right food, sleep, rest, warmth, and other common things of life.”

We have grave doubts whether Sir James Paget's recommendations with regard to carbuncle will meet with general approval. He asserts that they will get well as soon without cutting as with it, and that the operation will not always prevent spreading or pain. There are some cases in which an opening may be made, as we would open an abscess; but they are the minority. Carbuncles heal more rapidly when not cut. The common belief in the need of stimulants and plenty of food, he thinks quite groundless; and he describes his own treatment in these cases as practically “doing nothing.” The best course is to cover the carbuncle with emplastr. plumbi, spread upon leather, with a hole cut in the middle, through which the pus can exude; over all he puts a poultice of equal parts of linseed meal and bread. Opium may be given to allay pain; but nothing else is necessary.

“Sexual Hypochondriasis” forms the subject of a most interesting essay. We are glad to find Sir James Paget undertaking the discussion of this subject. There appears to be an impression that, in so far as it refers to males, it is one which we ought to avoid. The result is a great deal of professional ignorance, and a greater

amount of mischief to the unfortunate patients, who are thrown into the hands of scheming quacks. The ignorance is sometimes displayed in the books of qualified men, who often rather describe symptoms enumerated by others than those that have come under their own observation. Sir James Paget speaks out plainly upon this point, and places Lallemand first among the false teachers:—

“His description of spermatorrhœa, in its complete form, is a description of something which I believe to be unknown among Englishmen. It may be that there is no such disease in France—a wild imagination may have suggested it—but whether it can be found in France or not, I believe you will never see it here.”

The author believes that the true source of evil in these cases is mental, and that it is to this we are to direct our efforts should interference be necessary.

“Notes for the Study of some Constitutional Diseases,” “Senile Scrofula,” “On Dissection Poisons,” are papers full of careful observation and sound thought. They are only a few out of the collection. The volume, as a whole, is one of great value, and is a contribution to surgical literature which we most gladly welcome. Besides conveying the results of a life-long study of disease, as it presented itself to the author, the work is eminently suggestive, and offers plenty of material for investigation by the younger workers in the profession.

Cheerful Words. Edited by WILLIAM HYSLOP. Pp. 304. London: Baillière, Tindal, and Cox. 1875.

MR. HYSLOP is the proprietor of a private asylum at Church Stretton, Shropshire, and is the editor of this little volume. It comprises a series of sermons adapted for the inmates of various institutions—such as asylums, hospitals, &c. A journal devoted to medical science is not the place for any theological criticism. We can only say that the book appears to fulfil fairly the purpose for which it was printed. The sermons are not too long; they are generally speaking well written, and they deal with those aspects of religion which, to the suffering, are always the happiest and the most consoling.

The Successful Treatment of Internal Aneurism. By JOLLIFFE TUFNELL, F.R.C.S.I.; M.R.I.A. Second edition. Pp. 71. London: J. & A. Churchill. Dublin: Fannin & Co.

AMONG the problems in the profession of surgery to the solution of which the Dublin school has contributed, there is none perhaps more important than that of the treatment of aneurism. Recognised in the earliest days of Medicine, this disease formed until comparatively recent times, one of the great difficulties of practical surgeons. When it occurred in the extremities, the remedy was often a very doubtful one, for if the patient had not his life cut short he was doomed to permanent maiming. Even ligature entailed risks which could not be faced without the gravest misgivings. It is certainly due to some of the surgeons of this city that a practice was revived some years ago which had strangely fallen into disuse. The treatment by compression has become an established rule everywhere throughout the world, and we may, at least, lay claim to the credit of having fixed attention upon the method, and established the principles upon which it is most likely to be successful.

But there is a class of aneurisms which is beyond manipulative skill, and which perhaps most strictly comes within the range of the physician's functions. Once upon the track, however, it was natural that surgeons should endeavour to arrive at some plan of treating these lesions of internal arteries. Here, again, the practice was not altogether original; but it had at all events the merit of being based upon better physiological laws than those known to Valsalva. Bleeding, starvation, rest, formed the essential features of his treatment; and if some recovered, it is hardly too much to say that many died under the disease, and the triple remedy. Yet there was sufficient to show that in some respects Valsalva was right, and that especially in regard to rest he had hit upon a rational procedure.

So much of his system as was considered sound was adopted by some Dublin surgeons, and was specially tested in the practice of the late Mr. Bellingham and Mr. Jolliffe Tufnell. The latter gives us the result of many years' experience in the pamphlet before us. Some half dozen cases here reported are full of interest to every surgeon and physician. They are typical instances of the disease, and there cannot be any doubt of the good results

which followed the treatment pursued in all. In two or three cases there were opportunities of examining the bodies *post mortem*, years after, when the patients had died of some other affection, and the characteristic deposit of laminated fibrin was found in each. One of the most remarkable is that of a man who was cured of abdominal aneurism, and died subsequently of nephritis. An admirably-executed lithograph shows how perfectly the reparative process had gone on in a very large aneurism of the abdominal aorta, leaving a channel for the passage of the blood.

The treatment recommended is rest, regimen, and remedial agents. The object is to bring the blood into a highly fibrinised state. Mr. Tufnell says:—

“Our object is by every possible means to reduce the watery elements, and increase the solid constituents of the blood. We require to diminish the heart’s action in volume, but we also need to have its frequency reduced. The quantity of blood in the system must be lessened and the force of the circulation reduced; but this must be effected through cutting off the supply of fluid and acting upon the exhalants of the skin, the kidneys, and the bowels, and not by taking blood from the arm. We desire to diminish the heart’s action in the first place, in order to prevent enlargement of the aneurism; in the second place, with a view that the sac (acting under the law by which all comparatively empty cavities collapse) shall correspondingly contract; and in the third, that the current of blood being reduced to a wave-like form, shall, by continued deposition, first line the cavity, and ultimately fill it up altogether. Fibrinisation is to be effected by maintaining the quality of the blood and preserving the patient’s health.”

The effect of rest in diminishing the frequency of the heart’s action was well exemplified in the case of one of the patients. A pulse, normally 96, fell to 66 when the man lay down, so that by this means the heart beat 43,200 times less in 24 hours than when the patient was allowed to move about. During the two months or ten weeks for which the patient is confined to his bed he must on no account sit up. Absolute rest is insisted upon, and very full directions are given in the book for the arrangement of the bed. As to the diet, it is to be restricted to the following:—

“For breakfast, two ounces of white bread and butter, with two ounces of cocoa or milk. For dinner, three ounces of broiled or boiled meat, with three ounces of potatoes or bread, and four ounces of water

or light claret. For supper, two ounces of bread and butter, and two ounces of milk or tea, making in the aggregate ten ounces of solid and eight ounces of fluid food in the twenty-four hours, *and no more.*"

We have here Mr. Tufnell's successful cases. We do not know what number have resisted treatment. That would be a most important factor in deciding between this and some rival plans of treatment. But the author has shown very clearly that aneurism of the great internal vessels is not necessarily a fatal disease. He is deserving of thanks for the perseverance with which he has followed up the subject in its different phases during many years. It is no small praise to say that he has published an essay which is vastly more valuable than many pretentious works. It is concise and clear, and for that reason as well as for its practical character and common-sense tone, will be a most acceptable addition to the professional library. We are glad to be able to say so much, and to congratulate Mr. Tufnell on what he has done in this direction to extend the reputation of the school with which for so many years he has been honourably identified.

The Forces which Carry on the Circulation of the Blood. By ANDREW BUCHANAN, M.D. Second edition. London: Churchill. 1874. 8vo, pp. 101.

THIS work is divided into three parts. The first treats of the force of the heart, the second of the vascular forces, and the third of the pneumatic forces which maintain the circulation of the blood.

The calculation of the force of the heart is made on similar principles to those employed by Meyer, Donders, Ludwig, Haughton. These principles are unquestionably correct. The force exerted by the heart (left ventricle) at each contraction is equal to the quantity of blood expelled multiplied by the height of the column of blood corresponding to the aortic pressure. But we know neither the quantity of blood nor the hæmostatic pressure. Donders estimates the former at 188 grams (6·631 ozs.); Ludwig at 175 grams (6·167 ozs.);^a Haughton, 3 ozs.;^b and Buchanan, 2 ozs. With regard to the height of the hæmostatic column in the human aorta we are equally in ignorance, although, from the acute observations and ingenious reasoning of Dr. Haughton, we have good

^a Fünke. *Lehrbuch der Physiologie.* Vierte Auflage. Bd. I., S. 140.

^b *Outlines of a New Theory of Muscular Action.* P. 22.

grounds for assuming it to be equal to that observed in the larger animals, as the horse—that is, a little over 9 ft. of blood. Ludwig makes it equal 2.24 metres (7.3472 ft.); Donders, 3.21 metres (10.528 ft.); Hales assumes it to be $7\frac{1}{2}$ ft.; and Buchanan, 90 inches. It would hence appear, that from the great uncertainty in which we are as to the data on which our calculation of the force of the heart must be founded, that the calculation itself cannot have any great value, and we must agree with Professor Sanderson, who says:—"If exact information were attainable as to the quantity [of blood] which the heart actually discharges at a stroke, it would be possible to measure the quantity of work done by the heart in the maintenance of the circulation in a mammalian animal, and inferentially in man; but inasmuch as no such method at present exists, no estimate can be given which possesses even approximate value."^a

We must, in justice to Professor Haughton, correct an inference which might be deduced from some statements of Dr. Buchanan. In his Appendix (p. 92) Buchanan seems to put forward a claim to priority as to the method of calculating the effective force of the contraction of the heart. Dr. Haughton never laid claim to any priority as to the method, which is as old as Bernoulli, but both in his Graduation Thesis (published in 1863, prior to the first edition of Dr. Buchanan's work) and in his paper in *The Dublin Medical Journal*, in February, 1870, he seeks to establish the fact that the hæmostatic pressure in the aorta of man is equal to that which was found experimentally by Hales and others to exist in the principal arteries of horses, oxen, and the larger mammalian animals generally, and by this means to determine one of the data indispensable for the calculation. We think, also, that no one acquainted with mechanical reasoning could deduce from Haughton's calculations that the blood leaves the heart with an initial velocity of 750 ft. per minute, a deduction made by Buchanan, and which, he supposes, is a *reductio ad absurdum* of Haughton's arguments.

Dr. Buchanan takes into his calculation the area of the ventricular orifice of the aorta and the velocity of the blood leaving the heart. Donders neglects the velocity, as making only an inconsiderable difference in the result, and Haughton^b has shown that it is not necessary to take account either of the area of the aorta, or of the distance through which the blood is propelled by the

^a Handbook for the Physiological Laboratory. P. 262.

^b New Theory of Muscular Action (Graduation Thesis, 1863), P. 22. Compare also *Pick. Die Medicinische Physik.* S. 126.

ventricular contraction. On the whole, we do not think that Dr. Buchanan has advanced our knowledge of this part of his subject. The principles on which the solution of the problem rests are, as we have said, simple, but the difficulties in the application of the principles are as yet insuperable.

With regard to the *vascular forces*, the author accepts the usually received views—namely, that the vessels exert no force originating in themselves, and helping to carry on the circulation. The elasticity of the arteries serves two purposes—First, to equalise the flow of the blood and change the intermitting current as it leaves the heart into a continuous stream as it passes through the capillaries and veins. Secondly, “to propagate the force derived from the heart unabated throughout the whole arterial system, so that arteries of equal size, whether near to or remote from the heart, may propel the blood with the same force into the capillary vessels, in which they terminate.” This view is founded on the supposition that the tension is the same throughout the whole arterial system, being no greater in the arteries near the heart than in those more distant. That this is not so has, however, been proved by Marey.* The muscular contractility of the arteries is of use to regulate the quantity of blood going to each part, according to its varying needs, but does not—at least in the higher animals—assist in propelling the blood into the veins.

By the *pneumatic forces* is understood the motive power exerted on the blood by the active dilatation of the thorax in inspiration, and of the heart in diastole. It has been supposed that this force could not have any effect, except on the vessels quite close to the chest, because if the blood were sucked out of the vessels further back, their walls would collapse under the atmospheric pressure. Dr. Buchanan, however, holds that the suction force is felt throughout the entire circuit of the blood, the vessels being prevented from collapsing by the *vis a tergo* of the heart, which constantly keeps them distended with fluid.

The chapter on the pneumatic forces is the longest in the book, and the author writes like a man who was very strongly impressed with the importance and novelty of his subject. He describes various models, which are intended to illustrate how the pneumatic forces act in helping on the circulation, and how it is that the blood which is drawn into the chest during inspiration is not expelled during expiration. The whole chapter will well repay

* Physiologie Médicale de la Circulation du Sang. P. 150.

perusal, although, so far as we can see, there is nothing very novel in the considerations put forward by the author. It seems to us to come simply to this, that at all times, under normal circumstances, there prevails in what he calls the circumpulmonary space a negative pressure, so that both during inspiration and expiration a suction is exerted on the blood—greater during the dilatation of the chest, less during its collapse.* So in the apparatus described and figured on page 50, at all times, both during the ascent and during the descent of the piston, a negative pressure must exist exterior to the elastic bag which represents the lungs; otherwise the water would not stand in the cylinder above the general level of the fluid in the reservoir. But if the piston be made to descend still further, so as to compress the air in the interior of the cylinder, then it is manifest that the water will be forced out. The negative pressure in the chest is for the most part maintained by the elastic tissue of the lungs, which, continually tending to contract, reduces the pressure in the mediastina. That this pull of the lungs is felt through the walls of the heart is shown by the ingenious observations of Marey,^b who measured the tension in the different chambers of the contracting heart of living animals, and found that during the relaxation of the cardiac walls the pressure fell below zero.

The spontaneous dilatation of the chambers of the heart on the cessation of the systole has long been a puzzle to physiologists. The celebrated theory of "*Selbststeuerung*," put forward by Brücke, was to the effect that during the systole of the ventricles the openings of the coronary arteries were closed by the curtains of the semilunar valves, which were at this time applied to the wall of the aorta. As soon as the systole came to an end, the valves fell together and the blood was driven into the coronary vessels by the contraction of the aorta, and this injection of the blood-vessels of the heart caused an unfolding of its walls, which was the "*Selbststeuerung*," or spontaneous dilatation, whose explanation was required. This theory has been called in question on many grounds, both anatomical and physiological, and was supposed to have received its death-blow from the observations of Ceradini, which were thought to prove that during the systole of the ventricle the semilunar valves did not lie in apposition with the

* Brücke (*Physiologie* II., 162) states that during expiration the pressure inside the thorax is greater than that of the atmosphere. A moment's consideration will show that this is true only of the pressure *inside* the lungs.

^b Loc. cit. P. 93, et seq.

wall of the aorta at all, but projected into the lumen of the vessel, bounding by their free edges a triangular space, through which the blood passed. Brücke,* however, has recently reconsidered the whole subject, and has given reasons more or less satisfactory for maintaining his former opinion.

Dr. Buchanan looks to the transverse septum which separates the auricles from the ventricles as the seat of the expansive power of the heart. This is forced out of its natural shape by the contraction of the ventricles, and on the termination of the systole, by resuming its natural form, it opens the ventricular cavities and restores the patency of the auriculo-ventricular orifices. For the particulars of this process and for some interesting observations on the play of the auriculo-ventricular valves we must refer to the original.

The author is of the opinion that the pneumatic forces of the chest and heart play a much more important part in the maintenance of the circulation than is generally supposed by physiologists—in fact, that, without the assistance of these forces, the contractions of the heart would be utterly incapable of driving the blood through the systemic vessels. He considers that death from asphyxia (cessation of respiratory movement) is due directly to the inefficiency of the heart, now unaided by the respiratory movements. The circulation of the blood in the foetus is maintained by *both* ventricles, and as at the moment of birth, with the establishment of respiration, the assistance of the right ventricle is withdrawn from the greater circulation, while the aid of the pneumatic forces is supplied, the circulation going on well in both cases, the author concludes that the pneumatic force is equal to that of the right ventricle, which, as he supposes from an observation of Hering on the tension in the pulmonary artery, is to the force of the left ventricle as 1:1·7, so that nearly $\frac{2}{3}$ ths of the force which maintains the circulation of the blood is derived from the suction power exerted in the chest.

On the whole, we have read this essay with much interest. We are far from agreeing with the author in many of his views, but his reasonings are always ingenious and suggestive, and we cordially recommend the work to the notice of our readers.

* Vorlesungen über Physiologie. Bd. I., s. 175, et seq.

WORKS ON MATERIA MEDICA.

Materia Medica and Therapeutics: Vegetable Kingdom. By CHARLES D. F. PHILLIPS, M.D., F.R.C.S.E. London: J. & A. Churchill. 1874. 8vo, pp. 584.

Few can have failed to notice the change which has come over the profession in the demands now made for treatises on the remedies in daily use. Pure materia medica—i.e., pharmacology and drug chemistry—is in disfavour, and there is, we think, danger of too scant regard being paid to the physico-chemical characters of drugs, ignorance of which most surely leads to uncertainty in prescribing, and not infrequently is attended with risk to the patient.

At present, however, the urgent request is for therapeutical treatises, and the volume under review is another contribution to the satisfying of this want.

Dr. Phillips does not appear to have had any special opportunities of investigation outside those within the reach of any well-read, industrious practitioner, who has trained himself in careful and sustained observation. Yet we can say at once that this is not a common-place work: it fairly fulfils the programme sketched out in the Preface, and may be welcomed as a substantial addition to medical literature. The style is fluent and good, the subject-matter is judiciously cemented together, and the author draws his inspiration, not only from a well-stocked library, but evidently also from a wide and varied experience.

Each article is discussed under several heads, which are conveniently distinguished by being printed in thick type. The first division of every article contains a *botanical description* of the plant, accurate and sufficiently full without being tedious. The second enumerates the *active ingredients*, without the inert materials, and much valuable information on the organic chemistry of plants is here concisely introduced. The third heading deals with the various *physiological effects* upon the body which the drug can produce. In this section the author is particularly happy in exhibiting, in a smooth and well-digested form, the results of a broad course of reading, and few trustworthy records have escaped his eye. On the most important medicines, such as opium and cinchona, a very full and satisfactory account is furnished of their action. The fourth is concerned with the strictly *therapeutic action* of the drug. Here we become better acquainted with the author's

individuality; and his practical remarks, many of them valuable criticisms, are plainly the genuine result of his own observations. The fifth section enumerates the different officinal *preparations* of each drug, with the range of their doses, giving to the latter, in many instances, the widest reasonable limits; and, lastly, *adulterations* are noticed only when common or important. The present volume, as is indicated on the title page, is only an instalment of a complete treatise on *Materia Medica* which the author hopes to produce.

We notice with pleasure that this book fairly reflects the current literature of its department at home and abroad, and much valuable information is culled from foreign monographs on single drugs. Everywhere there are evidences of the author's critical spirit and capacity for weighing evidence, and many non-officinal articles are judiciously treated—*e.g.*, *hydrastis*, *cocculus indicus*, *thuja*, &c. In a work that is essentially sound and reliable we do not care to pry into microscopic faults, and it is no disparagement to the author if we point out a few emendations, in prospect of a future edition.

No special sequence is observed in the arrangement of the articles, except that the plants are described under their natural orders, and even these are not grouped according to any system, but follow each other at hap-hazard.

At p. 13 we catch the author falling into that most objectionable and dangerous practice of recommending the dose of a poisonous drug (tincture of aconite) as so many *drops* instead of *minims*. It is strange how persistently this lax habit maintains itself with the majority of prescribers. Here and there a loose statement has been allowed to slip out; as at p. 84, speaking of the effects of *dulcamara* in *lepra* (*psoriasis*), we read:—

“As in England, however, *lepra* is a disease which generally originates in a want of tone or vigour of the whole system, it is probable that a general mode of treatment would be more efficacious than a specific one.”

The chemical formulæ are not always correct, and some confusion apparently between the old and new notation occurs in one or two places—*e.g.*, pp. 173, 174, and 461.

We had marked several passages for quotation or special comment which we have not space to insert, and will conclude our notice with a warm commendation of a work which the author is justified in stating brings together, “in a moderate compass, a more extensive series of facts respecting the action of drugs, and

especially a more enlarged view of what has been done in other countries, than will be found in the ordinary text-books."

Note-Book of Materia Medica, Pharmacology, and Therapeutics.

By R. E. SCORESBY-JACKSON, M.D., F.R.S.E., &c. Third edition. Revised, enlarged, and brought down to the Present Date. By DR. ANGUS MACDONALD, M.A., F.R.S.E., &c. Edinburgh: MacLachlan and Stewart. 1875. 8vo, pp. 663.

IN noticing the present edition of this work we have only to endorse the favourable opinion we formerly expressed when the first and second editions were under review. The text of the second edition has been followed for the most part, but some typographical errors have been corrected, and the recent additions to the British Pharmacopœia have been inserted in their proper places.

When a "Students' Text-Book" passes as rapidly through two editions as Dr. Scoresby-Jackson's "Note-Book of Materia Medica" has done, not only is hostile criticism disarmed, but even friendly criticism is unnecessary. We wish Dr. Angus Macdonald that success for the present issue which he so well deserves.

Free Phosphorus in Medicine, with special reference to its Use in Neuralgia: a Contribution to Materia Medica and Therapeutics.

By J. ASHBURTON THOMPSON. London: H. K. Lewis. 1874. Pp. 275.

ALTHOUGH phosphorus has been known for more than two centuries, and was administered internally so early as 1721, its therapeutic history has been chequered by unusual vicissitudes in favour, and until recently we heard much more of its deadly than of its sanative powers.

The key-note of this essay is that phosphorus can never be effectively employed but in its free and most active state, and the author labours, and with success, to show that the suspicion and even fear with which the use of this potent drug has been regarded are to be explained by the vast difference in its effects according to the medium in which it is prescribed. Considerable space is devoted to the pharmaceutic preparation of phosphorus; and after a careful discussion, into which much original work is incorporated, the three following suggestions for the safer administration of free phosphorus are deduced:—

"That solutions of phosphorus in virgin vegetable oils are not safe, and should therefore be entirely rejected.

"That the solid form is not a perfectly safe mode of exhibiting phosphorus; it may, however, be employed, but should never be presented to the empty stomach.

"That the administration of zinc phosphide should be attended by the use of an acid at the same time" (p. 94).

By experience and by research the author was brought to the conclusion that the uncertain effects of phosphorised vegetable oil are owing to the partial conversion of the metalloïd into hypophosphorous acid, which is a good solvent for phosphorus, constituting a solution endowed with extremely active toxic powers. But Mr. Thompson appears to have established the important point that free phosphorus may be administered in solution with cod-liver oil, in full doses ($\frac{1}{12}$ gr. three or four times a day) and for long periods, without the occurrence of any untoward symptom. He adds that to those who desire to investigate the therapeutic or physiological powers of this drug, unbiassed by the presence of any other active body, phosphorised cod-liver oil may be specially recommended.

More than one-third of the book is assigned to the therapeutic uses of phosphorus, particularly to its effects in neuralgia, "for it is over this disease especially that it appears to possess powers which subsequent experience may perhaps recognise as specific."

The chief precaution to be observed in the treatment of neuralgia with free phosphorus is to administer a full dose of the remedy in the first place; and the author believes that he has sufficient evidence to warrant the assertion "that unless half a grain or more be given in the course of each twenty-four hours, frequent failures, or only partial success in treatment, will be met with, even in the course of a tolerably small experience."

The volume concludes with a nearly complete bibliography, and with a minutely-detailed account of a case of accidental poisoning from the medicinal use of free phosphorus which occurred in the author's practice. We may observe, in passing, that the next edition would be much improved by the supply of a good index, as at present it is difficult, in the want of one, to refer to a particular passage. On the whole, this work may be characterised as an excellent specimen of a monograph, clearly and pleasingly written, and evincing a large amount of honest, independent work, coupled with a critical examination of the labours of others.

The publication of Mr. Thompson's researches seems to have been taken in bad part by our homœopathic neighbours, if we may judge from a review of it which appeared in the *British Journal of*

Homæopathy, Jan. 1st, 1875, and the writer of the review comes to the sad conclusion that "it is melancholy and contemptible enough to see a man in Mr. Thompson's position following Wilks, Harley, Thorowgood, and that band of men who sacrifice their independence."

Be this as it may, we think that the author may be congratulated on having made a valuable contribution to *materia medica* and therapeutics, and we recommend every physician who proposes to prescribe free phosphorus to procure and carefully read this treatise before he ventures to meddle with a drug which is a good servant, but a bad master.

A Manual of Psychological Medicine. By DRs. CHARLES BUCKNILL and DANIEL HACK TUKE. Third edition. London: J. & A. Churchill. 1874. Pp. 824.

IN the present volume Drs. Bucknill and Tuke have considerably enlarged, and thoroughly revised, the former editions of their work, in order to bring it up to the modern standard of medico-psychological knowledge. The authors are acknowledged "somatists," and their leading endeavour throughout has been to bring the study of insanity within the range of positive medicine. This view, which is now beginning to be almost universally recognised, is apparent within the first few pages of the book, where the authors consider it of all importance that "*bodily disease*" should be looked upon as an essential condition of insanity, and regard the latter "*as a disease of the brain, affecting the integrity of the mind, whether marked by intellectual or emotional disorder.*" The section on classification (by Dr. D. H. Tuke) has in great part been rewritten (as, indeed, have been also many other portions of the work), several new systems being introduced, in accordance with modern views—most important amongst which are those proposed by the late Dr. Skae and Dr. Bucknill, the former founded upon somato-ætiological principles, and which has since been modified by Dr. Batty Tuke; the latter consisting in "*the combination of psychical characters of phenomena, with pathogenetic relations and pathological conditions; the first forming the classes, the second the orders and genera, and the third the species*" (Appendix 2). The authors, however, still retain the classification enunciated in the former editions, dividing mental defect, or disorder, into five

great groups, viz:—I. Idiocy; II. Dementia; III. Delusional Insanity; IV. Emotional Insanity; and V. Mania, all of which may be complicated with general paralysis or epilepsy. In the section on ætiology, which follows, the *predisposing* and *exciting* causes of mental derangement are ably discussed, the authors considering amongst the former *hereditary tendency, consanguineous marriages, sex, age, climatic influences, occupation*, and the effect of *civilisation*; whilst amongst the latter physical causes, such as *intemperance, affections of the head and spine, uterine disorders*, and sexual excesses, and the various moral factors, such as *domestic grief, anxiety, religious excitement, &c.*, are severally treated of; while in the chapters devoted to the description of the various forms of insanity we notice the introduction of the sphygmographic observations of Drs. Hun, Wolff, and George Thompson, on “the pulse of the insane,” together with a summary of the ophthalmoscopic examinations of Drs. Clifford Allbutt and C. Aldridge on the retina in cases of general paralysis—important steps in the application of physical means to the diagnosis of mental disorder. The chapter which follows—that on Diagnosis—we can confidently recommend to the careful perusal of general practitioners who, in the routine of every-day practice, are frequently called upon to determine the mental condition of individuals, and in such cases the information here given, as well as the legal enactments relating to the insane, contained in the opening pages of the work, cannot fail to be of value. In the pages allotted to the consideration of the pathology of insanity, the authors (in our opinion) clearly show the dependence of a disordered mind upon a diseased condition of the brain, laying it down as a broad view of the production of insanity that—“*The brain, like every other organ of the body for the perfect performance of its functions, requires the perfect condition of its organisation, and its freedom from any pathological conditions whatever. Consequently, the existence of any pathological state in the organ of the mind changes its healthy functions, and produces more or less disease of mind—that is, of insanity.*” Cerebral hyperæmia and anæmia are advanced as fruitful sources of such pathological conditions, acting, by their nutritive influences, on the myriads of brain cells, upon the normality of which the integrity of the mind so greatly depends. A noteworthy feature in the volume is the insertion of an able article from the pen of Dr. Batty Tuke on the morbid histology of the insane brain, illustrated by several well-executed coloured lithographs, which fairly represent many of

the conditions found on microscopical examination of prepared sections of the brain tissue, to which has been added by Dr. H. Take a concise summary of the cerebral convolutions, accompanied by corresponding figured diagrams, in accordance with the classification of Gratiolet, which proves very convenient for reference in cases of localised lesions of the convolutions. In the last chapter the treatment of insanity and the care of the insane are fully discussed, all the most modern methods, both moral—or, as they may be better called, physiological—and medicinal, being reviewed at considerable length. Amongst the former may be mentioned kindness, combined with watchfulness; amusement, tempered with discipline; out-of-door exercise, with occupation of the mind: and amongst the latter may be classed opium and its derivatives, hyoscyamus, conium, bromide of potassium, digitalis, chloral hydrate, ergot of rye, together with tonics, good food, and the various forms of baths, electricity, &c. The valuable Appendix of cases which appeared in the former editions is here retained, and Dr. Bucknill has added a short note on the classification recently proposed by him, which has been already mentioned.

In conclusion, we must congratulate the authors on the production of this valuable work, which supplies a much-felt want, both amongst specialists and practitioners generally, and which, in its present condition, may be regarded as one of our English classics on this branch of medical science.

PART III.

HALF-YEARLY REPORTS.

REPORT ON PUBLIC HEALTH.

By CHARLES A. CAMERON, Ph. D., M. D., F.R.C.S.I.,
L.K. & Q.C.P.I.; Professor of Chemistry and Hygiene in the
Royal College of Surgeons, Ireland; Medical Officer of Health
and Analyst for the City of Dublin, &c.

[Concluded from page 71.]

PHOSPHORUS POISONING.

Some fatal cases of poisoning by phosphorus have lately occurred in Ireland; and on the Continent this substance is frequently the cause of death, either by design or accidentally. In manufactories where lucifer matches are manufactured, chronic poisoning by phosphorus is by no means rare. Necrosis of the teeth and of the bones of the jaws was very frequent amongst match-makers until the somewhat general substitution of red, or allotropic phosphorus for the common kind in the preparation of the matches. White phosphorus forms acid fumes on mere exposure to the atmosphere, whilst the red kind is unalterable in the air unless when highly heated. There is no good reason why the use of spontaneously inflammable phosphorus should not be wholly given up, as the other kind of this element is an effectual substitute for the former. Indeed, the use of common phosphorus for this purpose might fairly be prohibited by the State.

In the works on Medical Jurisprudence it is laid down that there is no specific antidote for phosphorus poisoning. When just swallowed, the use of the stomach-pump and the administration of magnesia in the form of paste prove serviceable; but a few hours after the poison has been swallowed it has hitherto been found impossible to check the effects of this powerful substance. The

* The author of this Report will be glad to receive any books, pamphlets, or papers relating to hygiene, dietetics, &c. They may be forwarded through the agencies of this Journal.

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precise manner in which phosphorus produces its toxic effects is not thoroughly understood. The quantity which often produces death is not more than 3 or 4 grains. In fatal cases the lesions revealed by *post mortem* examination are frequently found to be very trifling—and, indeed, perfectly insignificant, when compared with those caused by arsenic, mercuric chloride, the stronger acids, and all other corrosive poisons. Phosphorus probably produces its worst effects by withdrawing oxygen from the blood.

On the 25th April, 1874, M. Depaire, on the part of the Revision of the Pharmacopœia Committee, presented^a a report on the employment of essence of turpentine as an antidote for poisoning by phosphorus. The report detailed the results of numerous experiments performed on dogs, the results of which proved that essence of turpentine did not possess, as alleged by recent experimenters, the properties of an antidote to phosphorus. The animals experimented on were dogs; the phosphorus was dissolved in olive oil, and administered by the mouth and by hypodermic injections. The turpentine was given as a gummy emulsion, and was administered by the mouth. The experiments of Curviè, Vigier, and more especially of Rommelaere, have, however, shown that essence of turpentine, when not rectified, has the property of neutralising the toxic effects of phosphorus. In a communication^b by M. Rommelaere, read before the Belgian Academy of Medicine, on the 26th December, 1874, the author has shown that rectified essence of turpentine did not act as an antidote in the case of dogs poisoned by phosphorus, but that the common turpentine did. The common turpentine has, especially under the influence of light, the property of readily absorbing the oxygen of the atmosphere, and of parting with it to other oxidisable bodies, and probably of converting part of the absorbed oxygen into ozone. It would appear, then, that essence of turpentine only acts as an antidote to phosphorus by reason of the oxygen which it contains, and which converts the phosphorus into an oxidised and comparatively innocuous body. If this be really the case, the poisonous action of phosphorus must, as surmised, be due to its withdrawal of oxygen from the capillaries. Several experiments have shown that phosphorus dissolved in oil brought into contact with common turpentine, forms a solid compound. If it be really the oxygen or ozone contained in turpentine that acts as an antidote to phos-

^a Bulletin de l'Académie Royale de Médecine de Belgique. Tome 8. No. 13.

^b Bulletin de l'Académie Royale de Médecine de Belgique. T. 8. No. 13.

phorus, it might be desirable to ascertain whether peroxide of hydrogen, which parts readily with its oxygen, might not be an antidote for phosphorus. A solution of this substance might be hypodermically injected or given by mouth. In cases of phosphorus poisoning in man, M. Rommelaere recommends the administration of 1 gramme (15·4 grains) of turpentine every half hour or hour during the progress of the case, fats and oils of every kind, mucilaginous substances, and alcohol.

It has been recommended to suspend small vessels containing turpentine in the rooms where matches are prepared, in order that the vapours of phosphorus might be neutralised by those of the turpentine. We believe that this suggestion has been acted upon in two or three English and Belgian manufactories.

CONTAGIA AND BACTERIA.

On the 6th April, 1875, Dr. H. Charlton Bastian, Professor of Pathological Anatomy, University College, London, delivered before the Pathological Society of London an address on the Germ Theory of Disease. Dr. Bastian is a well-known and an able advocate of the doctrine of spontaneous generation. Though he has not been able as yet to adduce any proofs of the evolution of living organisms from mineral matter, he believes that he has conclusively demonstrated the fact that certain low forms of life are generated during the decay of organic matter, and that they are not necessarily produced from living beings of a similar kind. With reference to bacteria—which so many pathologists now consider as closely related to the disease poisons, if some of them be not actually the virus of zymotics—Dr. Bastian argues that they are merely “pathological products.” He admits that they are found abundantly in pus, in the tissues of persons suffering from certain contagious diseases, but he contends that they are also widely distributed throughout the human body in connexion with dying tissue, and that their existence therein is most easily explicable by the assumption of an origin by heterogenesis and by archebiosis. When, however, bacteria do come into existence spontaneously as a product of the decomposition of nitrogenous tissues, then, according to Bastian, they multiply rapidly according to “the ordinary fashion.” The greater part of Dr. Bastian’s address is devoted to an attempt to refute the views of Pasteur, Burdon-Sanderson, Beale, Lister, and other upholders of the

germ theory of disease; and he sums up his arguments by enumerating the following "facts," as he terms them:—

"1. With two exceptions, no definite germs or organisms are to be met with in the blood of patients suffering from these diseases during any stage of their progress.

"2. The virus or contagium of some of these diseases, whatever it may be, does not exhibit the properties of living matter.

"3. On the other hand, the virus of most of these contagious diseases with which definite experiment has been made is most potent in the fresh state, whilst its power very distinctly diminishes in intensity as organisms reveal their presence more abundantly therein—facts which would seem to point to the conclusion, or at least are quite consistent with the notion, that the contagious poison may be a chemical compound which gradually becomes destroyed or modified by the successive changes taking place in association with processes of putrefaction.

"4. There is the extreme improbability of the supposition that this whole class of diseases should be caused by organisms known only by their effects.

"5. The facts of the sudden cessation, periodical visitation, and many of the other phenomena of epidemics, however difficult they may be to explain upon any hypothesis, seem to oppose almost insuperable obstacles to the belief that living organisms are the causes of such epidemics of specific contagious diseases."

Dr. Bastian labours hard to demolish the germ-theory of disease; but why does he not furnish a more plausible, or even as probable a hypothesis to account for the propagation of contagious maladies. He should recollect the oft-quoted words of Horace:—

"Si quid novisti rectius istis
Candidus imperti; si non his utere mecum."

Is there any "fact" better established than that a healthy person may contract small-pox or typhus from an infected person without actual contact of bodies? Does not the history of Asiatic cholera prove to a demonstration that the disease is only propagated along the highways of man? Would the recent outbreak of measles amongst the Fijians have occurred if their island-homes had remained unvisited by Europeans? It is impossible to answer any of these questions except by the most emphatic affirmatives. That a *something* passes from sick to healthy men and other animals

and produces a specific disease is now an incontrovertible fact. Surely if such be admitted, the existence of a contagium of some kind must also be acknowledged. The contagium can hardly be a gas, or be produced by "abnormal conditions of the atmosphere;" for, if that were the case, how could we explain the propagation of vaccinia or of syphilis? We have read most carefully through Dr. Bastian's address; but it has failed to shake our belief in the germ-theory of disease. We admit with him that bacteria swarm in decaying animal and vegetable matter, when no disease is present. We also grant that, whilst bacteria occur in great numbers in the blood of certain of the lower animals in a normal state, they are absent from the blood of men when in health. This proves nothing. Every microscopist knows that bacteria are to be found almost everywhere. Beef-tea, a few hours old, swarms with them. Almost everything we eat contains them. Bacteria of the ordinary kind are, no doubt, harmless enough; but there may be forms of life resembling, only in their structures, the bacteridæ, but which may differ as widely from others in their effects upon man as the poisonous fungus does from the edible mushroom with which it is often confounded. There are diseases which every one admits are produced by living organisms, animal and vegetable. Most of the diseases of our agricultural plants are produced by minute vegetables, which multiply with great rapidity. The itch in man, and the scab in the lower animals, are undoubtedly contagious diseases, as they are produced by the introduction of living beings and their multiplication within the body. If the itch acarus were so minute that the microscope could not discover its existence, we should have Dr. Bastian denying that it was caused by a "living organism capable of reproducing its kind." Dr. Bastian gives no satisfactory explanation of the remarkable facts proved by Chauveau, and subsequently by Burdon-Sanderson—namely, the existence in the infecting matter of vaccine and of sheep-pox of organised and moving particles, upon which the infecting properties of the matter depend. He says that the fact that dried vaccine retains its vitality is against the assumption of the existence of disease germ in it. But why should it be so? Desiccated seeds retain their vitality. The grains of wheat found in the pyramids, in the hands and tombs of Egyptian dead, though 3,000 years old, have developed healthy plants—the "mummy wheat."

In the discussion which followed the reading of Dr. Bastian's papers, Dr. Dougall, of Glasgow, supported the author's views, as

did also, to some extent, Dr. Crisp. On the other hand, Dr. Bastian's views were combated very ably by Dr. MacLagan. The latter stated that it was not necessary to disbelieve the possibility of the spontaneous development of bacteria in order to hold consistently the germ-theory of disease. He agreed with Dr. Burdon-Sanderson that all microzymes are not contagia, but that all contagia may be microzymes. He admitted that Dr. Bastian has experimentally proved that bacteria were pathological products; but he contended that the establishment of that fact in nowise invalidated the germ-theory of disease.

Dr. Dougall, who agreed with Dr. Bastian, pointed out that the results of his experiments proved that putrefaction took place in liquids without the simultaneous appearance of bacteria, whilst bacteria were to be found in liquids which were not fermenting. The two phenomena are distinct and not necessarily even correlated. We do not, however, think that the illustration of a case in which putrefaction is present without the occurrence of bacteria, adduced by Dr. Dougall, is very striking. He stated that a mixture of blood and one-eighth of its weight of solution of potash, evolves at once a putrid odour, which it retains for a fortnight. At the expiration of two or three months no albumen is to be found in the liquid, in which bacteria are never found. We would venture to suggest that such a mixture would not putrefy in the ordinary sense of the word, but would be chemically acted upon by the powerful corrosive agent, potash, and decomposed. We are, however, aware that Dr. Dougall has observed putrefaction in liquids which were not undergoing decomposition from external chemical agencies, and which did not contain bacteria. But all this has really no direct bearing upon the germ-theory.

Mr. Jonathan Hutchinson agreed with Dr. MacLagan in attributing the causes of specific fevers to the introduction of specific germs into the system, but he did not agree with him in thinking that the contagiousness of certain forms of inflammation could be accounted for by the germ theory. In the case of syphilis and of erysipelas, he considered that the products of inflammation might themselves be the means of "contagion by contiguity and the patient's own tissues; contagion through the patient's vascular channels, it may be to somewhat distant parts; or a contagion, if the conditions favour such a transplantation of them, to another individual." On reviewing the whole paper, and the discussion which followed it, we cannot avoid coming to the conclusion that the supporters of

the germ-theory had the best of the argument. So far as facts go, no very new ones were adduced, and, indeed, are scarcer than theories in relation to our knowledge of the causes of zymotic maladies and contagious inflammations. But it seems, from every point of view, more rational to assume that contagious affections of all kinds are produced, each of them by a specific germ, than to take for granted that they arise from the introduction of ordinary particles of dead matter into the system. Dr. MacLagan was happy in his suggestion that the increase of bacteria in a fluid in proportion to the diminution of the intensity of its septic virus, which was adduced by Dr. Bastian as an argument against the germ-theory, is probably due to the bacteria increasing at the expense of the contagium itself, which he held to be a living entity, "minute beyond the reach of all sense."

Whilst the debate on the germ-theory was going on amongst the members of the Pathological Society, those of the Obstetrical Society were discussing the question—Is puerperal fever contagious? Mr. Spencer Wells classes this disease with septicæmia and pyæmia, and stated that if the antiseptic method of treating surgical injuries, adopted by Lister, were carried out in lying-in hospitals, they would be purified from metritis as surgical hospitals have been from pyæmia. Dr. Newman pointed out that certain conditions amongst puerperal women favoured the development of puerperal fever, just as the well-known zymotics occasionally are more than usually prevalent when favoured by certain conditions affecting man. Dr. Braxton Hicks pointed out that, even in such populous places as London, it was possible to have 90 per cent. of the cases of puerperal fever traced to infection. On the whole, the views most generally expressed at the meeting were against the theory of a specific germ being the cause of metritis. Dr. A. Farre believed in a plurality of puerperal fevers—namely, a simple irritative fever, without infection; second, a fever not of specific origin, of which the virus has no incubative period or definite course; third, a fever produced by specific blood infection. The first two varieties he considered strictly puerperal, and all, he stated, might be termed *post partum*.

The *Lancet* for February 20th, 1875, contains an address on the etiology of typhoid fever, delivered before the Clinical Society of London by Sir William Jenner. He discusses at some length the different views entertained on this subject. Some believe that enteric fever, like typhus, is only propagated from individual to

individual; others consider that it is sporadically generated, by the introduction of the decomposing excreta of even healthy persons into the system, either through the medium of impure water or tainted air. Sir William considers it "*probable*" that the admixture of sewage not typhoid with potable matter occasionally produces typhoid *de novo*; but he believes that the disease is most frequently caused by contagion. He gives an instance in which a young lady contracted typhoid under circumstances which appeared to preclude the possibility of contagion being the cause of it. We may, however, remark that instances of apparently sporadic cases of every zymotic disease are occasionally to be met with. Potable water, milk, sewer gases, and even dust are carriers of contagia; and such being the case, it is difficult to state positively that any case of the well-defined zymotic diseases has had a sporadic origin.

Sir William Jenner considers it possible to contract typhoid by mere contact with the sick; but only when the doses of poison are very large, or long-continued.

We have on many occasions inquired into the origin of localised outbreaks of typhoid fever, and almost invariably have found them due to the use of not merely impure water, but water rendered poisonous by the dejections of a typhoid patient. We constantly examine waters of the very worst quality, literally impregnated with decomposing animal matter, and yet, on inquiry, we find that no cases of typhoid arise amongst those who use them. So large a proportion of the water used in Ireland is bad, that, if mere decomposing animal matter were the cause of typhoid, that disease should be much more general than it is. Wherever we find that bad water has caused typhoid, we have, in every case that we have investigated, found that the water had been polluted by the excreta of a typhoid patient. The pump-water used in a house at Clontarf, occupied by the Town Clerk of Dublin, was very impure; but, though drank for years by numerous persons, it never produced typhoid. A person in the incubatory stage of that disease having, however, become a visitor in the house, the disease, in due time, made its appearance amongst other persons, who were not in contact with the visitor. In this case almost direct communication was found between the soil-pipe of the water-closet and the shaft of the well. If healthy human excreta can give rise to typhoid, why is it the dejections of healthy persons so seldom produce the disease, whilst those of a typhoid patient produce a local epidemic of the malady?

In a paper* on Typhoid Fever by Dr. M. Bribosia, he states:—
 “The human body is the soil where the specific poison of typhoid fever is generated and multiplied.”

In the appendix to the report of Dr. Simon, Medical Officer of the Privy Council, just published, there is a valuable paper by Dr. Sanderson on the pathology of the infective processes. He points out that there are two relations in which life in the lowest plants stands to various morbid processes. In the one specific forms of vegetable life are found associated with specific diseases; in the other the common processes of disease are associated with the presence of microzymes. He employs the term mycosis to indicate an infiltration of living tissue with micrococci. Diphtheria and erysipelas depend upon mycosis. The experiments of Nassiloff, Eberth, Dolschenkow, Letzerich, Oertel, and others, in relation to the nature of the granular infiltration of the mucosa and subjacent tissues in diphtheria, are detailed by Dr. Sanderson. The whole report of Dr. Simon and its appendix may be obtained for 1s. 4d., and, therefore, we recommend our readers to obtain it, and read the valuable and original papers which it includes.

CREMATION v. BURIAL.

This question is discussed at great length in the sixth annual report of the State Board of Health of Massachusetts, January, 1875. The writer is Dr. J. F. A. Adams, of Pittsfield. Queries relating to the subject were addressed to nearly 500 physicians in America and the United Kingdom. Of these, 171 responded. The following is an analysis of the answers:—

“QUESTION I.—*Have you observed any instances in which sickness appeared to be induced or aggravated by the proximity of dwellings to cemeteries? If so, please cite cases.*

“The answers are as follows:—

	Masa.	Other States	Eng. and Ireland
Yes, . . .	5	3	3
No, . . .	126	29	1
No reply, . . .	2	—	2
	<hr/> 183	<hr/> 32	<hr/> 6

“QUESTION II.—*In such cases, have you attributed such sickness to poisoned wells, or foul air, or both?*

“Answers:—Air,	3
Water,	4
Both,	4
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Total,	11

The detailed opinions given with respect to cremation preponderate greatly in favour of burial, and the respondents who hold a contrary opinion do not appear to have given any good reasons for their belief. Question No. 3 had reference to the existence of bad waters in the neighbourhood of cemeteries. Question No. 4 was as follows:—

“Do you consider interment the best method, in a sanitary point of view, of disposing of the dead?”

“The answers may be classified as follows:—

	Massachusetts	Elsewhere
Yes,	53	17
Yes, with precautions,	12	6
Yes, in the country,	21	—
No,	36	8
No opinion,	11	7
	<hr/>	<hr/>
	133	38

Dr. Adams, in concluding this very valuable report, says:—

“The examination which we have attempted of the relative advantages of cremation and burial has, of necessity, been imperfectly performed. As regards cremation, the fact that it has not yet been practised, in a scientific manner, on this side of the Atlantic, has made us dependent upon the reports of European experimenters, of whom the number has, as yet, been small. As regards burial, although the investigation has been made as thoroughly as the limited time at our disposal would permit, completeness having been especially aimed at in reference to the system as at present practised in Massachusetts, yet the study cannot be regarded as furnishing positive results until it has been pursued for a much longer time, by a large number of investigators. This further investigation we earnestly hope will be generally undertaken.”

He believes that the results of the investigation upon which his paper is based are sufficiently definite to be summed up in the following aphorisms:—

“1. Pyre cremation, as performed by the ancients and by modern Asiatic nations, is an incomplete and disgusting process, certain to load the atmosphere with noxious fumes, and not certain to thoroughly consume the organic portions of the body.

“2. Cremation, accomplished by means of the Siemens' furnace, at an enormously high temperature, the fumes being subjected to a second combustion, is a complete, rapid, and inexpensive process, in no way offensive to bystanders, nor liable to contaminate the general atmosphere. Sir Henry Thompson's first method, by means of a double reverberatory furnace, is apparently almost as satisfactory.

“3. The three methods of recent Italian experimenters are all unsatisfactory. The temperature attained by Brunetti and Polli is not sufficiently high, while Gorini's method, although as yet but imperfectly tested, must obviously be both inconvenient and expensive.

“4. Burial in contracted spaces of ground, in the midst of cities and villages, as practised by all Christian nations from very early times until a period comparatively recent, and not yet wholly discontinued, has been repeatedly proved injurious to the health of the community, in proportion as such spaces of ground are overcrowded with bodies. This malign influence is most apparent during epidemics, when the mortality in the vicinity of these burial-grounds has been frequently observed to be excessive.

“5. Extra-mural interment, with regulations for the prevention of crowding, as now adopted by all of the largest cities of Europe and America, and very generally in smaller places, prevents, by removing the dead from the vicinity of the living, any possible injury to the public health. This plan, also, by increasing the number of public parks, is a positive sanitary benefit.

“6. Burial, as now practised in Massachusetts, is partly extra-mural and partly intra-mural. Regulations in regard to the depth of graves, their distance apart, and distance from dwellings and wells, are less stringent than in several European countries; but boards of health are empowered to prevent burial-grounds from becoming nuisances. Any injury to health, even where the grounds are located in the midst of populous towns and villages, is in this State an almost unheard-of occurrence.

“7. In other parts of the United States the same state of things exists as in Massachusetts, with the same general immunity from injury. In England extra-mural interment is more general than here, and the laws relating to burial are more strict, and, except perhaps in rare cases of infraction of the laws, the public health is not affected.

"8. The occasional injury to health from the proximity of burial-grounds which occurs, or is likely to occur, in this country, may easily be prevented by the complete abolition of the intra-mural system.

"9. *Cremation, therefore, is an innovation not demanded in this country, on sanitary grounds*; if, however, perfectly accomplished, by the best method known, there is no reason why its adoption should not be optional with all persons."

Mr. Eassie, the well-known sanitary engineer, has just brought out a work on Cremation,* in which full information on the subject is given. The book contains several illustrations. Mr. Eassie is in favour of this mode of disposing of the dead, which, he contends, is cheaper and less prejudicial to the public health than their burial in the earth.

In a former Report we have detailed the process of cremation and its cost, as performed in a Siemens' apparatus.

* *Cremation of the Dead: its History and Bearings upon Public Health.* By William Eassie. London: Smith, Elder & Co. 1875.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ROBERT M'DONNELL, M.D.

Secretary—E. H. BENNETT, M.D.

Sarcoma (Giant-celled) of the Lower Jaw.—DR. R. M'DONNELL exhibited a sarcomatous tumour of the lower jaw, removed by him from a boy aged twelve. He also exhibited microscopical sections of the tumour. He said:—The boy from whom I removed this tumour was admitted to Dr. Steevens' Hospital on 24th July, 1874, suffering from enlargement of the lower jaw, which had grown during the previous eighteen months. It had commenced to grow at the root of the canine tooth of the lower jaw upon the left side. A rapid increase in its growth occurred during the last four months. It was free from pain, and presented a firm, uniform, hard, and, at some parts, elastic feeling to the touch. The teeth were loosely embedded in the tumour. There was no glandular enlargement, but the parotid glands felt slightly indurated. It was removed on 8th August, 1874, the bone being sawn through as far back as the angles of the jaw. The patient made a good recovery, and left hospital on 25th August, 1874. This tumour was found to be a typical example of the sarcoma known as "giant-celled," a name given to it by Virchow. It is a variety of sarcoma containing very large cells filled with smaller ones—brood cells, as they have been aptly named. These large cells are sometimes round, sometimes polymorphous, and supplied with many processes or off-shoots. They are found to occur normally in the medulla of the bones of the fœtus, hence sometimes called myeloid cells. True myeloid cells, however, are not so large as the brood cells found in tumours. They are the largest unformed protoplasm collections that have been met with in man. They sometimes contain from half a dozen to even thirty or more lesser cells, with nuclei. Their origin, by a series of transformations from simple cells, is generally easily traced out.

They sometimes occur sporadically in various forms of sarcoma, fibro-sarcoma, granuloma and myxo-sarcomata. They are frequent in central, less so in periosteal sarcomata of the bones. Billroth has seen them in muscle-sarcomata. Similar protoplasmic masses have been described by Klein, in his work on the lymphatic system. He says:—I have come across, several times, in the normal as well as in the chronically-inflamed omentum endothelial cells which presented the characters of giant-cells—myéloplaxes—that is, protoplasmic masses containing five to ten nuclei.—*January 30, 1875.*

Stricture of the Urethra; absence of the Testis.—DR. ROBERT M'DONNELL said: The following is a brief history of the case which I wish to bring before the Society:—A man, who was only thirty-two years of age, was admitted to Steevens' Hospital on the 20th of last month. Although only thirty-two, and a countryman, he had been a long time suffering from stricture. The stream of urine had diminished, becoming gradually as fine as a crow-quill, and finally of the calibre of a knitting needle. On endeavouring to introduce a fine probe-pointed catheter, it came to a stop at the point where we generally meet with a stricture—namely, the region of the bulb. It yielded afterwards readily and rapidly to the ordinary process of dilatation. Notwithstanding this, the man, who was extremely emaciated, worn out to the last degree, and constantly passing muco-purulent urine, fell into a condition of low fever, and died. So far as the stricture was concerned, he died cured. However, he was not cured of the consequences of this stricture, which had been going on for a long time, and I have seldom seen a more terrible illustration of the sequel of neglected stricture than this case presents. Beginning with the bladder, we find it is small and rough, and coated with lymph. It presents very much the appearance of a dysenteric intestine; the mucous membrane is gone, and one would say, to look at it, that it was a portion of a dysenteric intestine. The ureters are hypertrophied to an enormous size; they are very nearly as thick as my little finger. On section the wall of the ureter is found to be greatly thickened, and coated with this ill-conditioned yellowish lymph. Both kidneys are found to be in a most extensive state of disease, enlarged, the pelves extending backward towards the calices dilated to an enormous size, and filled with muco-purulent matter. The right kidney has little, if any, of the normal structure left. The probe can be passed down into the ureter, so that this dilated cavity is in reality the expanded pelvis, extending back to the calices, and engaging the entire of the kidney. The portion of the cortical structure left is very small. On the other side there is a little more of it left, and this was the kidney that kept him alive; but even here the healthy structure is studded through with points of tubercular-looking matter, which would, no doubt, by degrees have

softened down, and come to the same condition as the other kidney. I may mention that the subject from which these kidneys were removed was deficient of a testis on the right side—a congenital deficiency. We thought while the man was living that, perhaps, it was an undescended testicle, and would be found in the cavity of the abdomen, but there was no trace of it, or even of a *vas deferens*, to be found on that side, so that it was a case of absolute deficiency of the testis.—*February 13, 1875.*

Dilatation of an Hypertrophied Heart, with Thrombosis.—DR. FINNY said: This is a specimen of a very large heart, weighing 12 ozs., and yet death occurred with a suddenness in this case which one would not have expected from the condition of that organ. The case is that of a woman, who was admitted on the 22nd of January, under my care, into the City of Dublin Hospital, presenting all the symptoms and appearance of advanced cardiac dropsy. For four months before her admission she had been subject to shortness of breath and swelling of the ankles, but did not suffer much inconvenience until the 13th of January, when the legs became œdematous, and vesicles were formed on the anterior aspect of the tibiæ, which burst, and prevented her moving about. Her face, arms, hands, legs, and the parietes of the abdomen were all œdematous on her admission; the action of the heart was very excited and quick, so that the pulse could hardly be taken at the wrist, but, measured at the heart, it was between 90 and 100. The least exertion, such as turning on the right side, sitting up and getting out of bed, brought on extreme dyspnoea and rapid breathing, accompanied with cough and some expectoration, but at no time was there any blood. Her face was cyanotic or semi-cyanotic. On examining the breast I found that the cardiac dulness was increased, extending from the lower part of the xiphoid cartilage to well under the nipple, and as low as the 7th interspace. The dulness did not take the pyramidal shape, nor did it extend above the fourth rib on the left side. The impulse of the heart was of an undulatory, uncertain character, being felt at one time in the epigastrium, and at another in the seventh intercostal space. There was no bruit. The first sound was frequently as if shortened, and then prolonged, with a peculiar slapping sound of the heart against the chest walls. The lungs presented an emphysematous condition, on the right side particularly, and on the left side dulness existed posteriorly, and there was evidence of consolidation of the lung, which I attributed partly to the œdema, and partly to the pressure of the enlarged heart. The urine was tested, and found to be free from albumen, but highly charged with urates. I diagnosed it to be a case of enlarged heart, though I was partly wrong in thinking it a weak one, for the heart was not only enlarged to the size you see, but the walls are much thickened.

The treatment consisted chiefly of rest, digitalis, acupuncture of the

legs, and in giving stimulants frequently. On the 3rd of February dropsy had left the legs, arms, hands, and face, but about the nates and the lower part of the abdomen there was still a good deal of œdema. On the evening of the 3rd she complained of a knocking in the chest, and placed her hand between the seventh and eighth intercostal spaces, to indicate the situation. The action of the heart was very irregular; the pulse at the wrist had come down to 44, while the heart's sounds were at times as if reduplicated, the second sound being exceedingly like an echo of the first. On the next day she seemed better, and was able to lie on her right side, which previously she had not been able to do. The improvement seemed to progress as to the dropsy; the water from the kidneys increased, and her general aspect improved. On the evening before her death the heart was much steadier; pulse, 68. She was sitting up in her bed, and feeling so much better, asked permission to be allowed to get up the next day to walk about the ward. She passed rather a restless night, and the night nurse was continually called upon to change her posture, and during the night she consumed the six ounces of stimulants, which had been her allowance for both day and night. Between seven and eight o'clock on the 6th of February the nurse left the room for a few minutes, and on her return found the woman dying, gasping for breath, and her face purple. There were no convulsions. I made the autopsy nine hours afterwards. I found the right lung was considerably emphysematous, lapping over the edge of the pericardium. Neither lung collapsed on opening the wall of the chest, but the right lung was the more emphysematous of the two. The heart extended considerably under the edge of the left lung to the left side and to the back. The lungs were otherwise normal; there was no pulmonary apoplexy or hæmorrhagic infarction observed, nor was there much œdema, and there was but a small quantity of serum in the pericardium. I found in the right ventricle no clot, though the cavity was considerably enlarged, but on opening the right auricle, I found from the superior vena cava, extending into the right auricle, a large fibrinous clot, which passed up into the appendix, to which it was firmly adherent, and in the same appendix were found several other white fibrinous masses. The clot is remarkable in its formation. There is a line seemingly separating it into two parts—one part is smooth, and corresponds to the right smooth wall of the auricle; the other is marked, and accurately corresponds to the muscoli pectinati of the anterior wall, and the sulcus corresponds to the division between the two walls of the heart. Upon opening the auricle it was not entirely filled with this clot, for there was a quantity of black fluid blood in it, so that the clot had not received its impression by the wall of the heart after death, as it was separated from it by the fluid blood. I think, therefore, this clot had been forming for some time before death, the current of blood from the superior and inferior venæ cavæ having passed

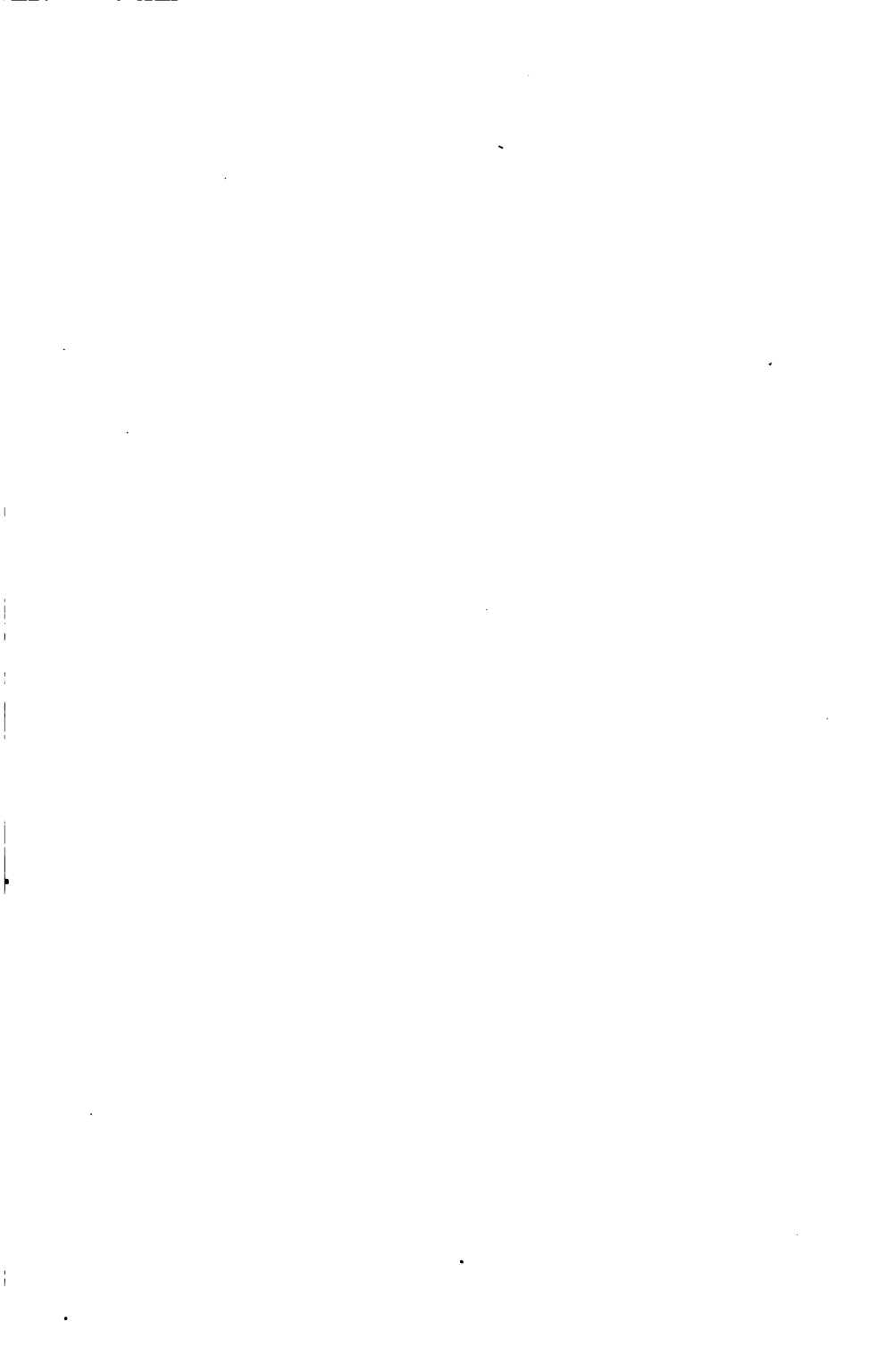


Fig. 1.



Fig. 2.



freely, but at last it became partially detached, and by blocking the auriculo-ventricular orifice thus caused some paralysis of the right auricle, already in a weakened and distended state. The left ventricle was enlarged, but all the valves on both sides are perfectly healthy.—*February 13, 1875.*

Internal Strangulation.—DR. BANKS showed part of the intestines of a child, one year old, who had been admitted into the Whitworth Hospital in a state of collapse, and died some hours subsequently. Mr. Lambert, the Clinical Clerk, who had the advantage of seeing the mother, learned that the child had been quite healthy up to eight days before admission, when it was suddenly seized with internal pains, and its bowels ceased to act. In a few days after this vomiting commenced. The pain and sickness continued; the child became daily weaker, and there was no attempt at a motion from the bowels.

The *post mortem* examination showed that all the viscera were normal except the small intestine, which presented a very unusual form of strangulation. At first sight, it appeared as if a portion of the ileum encircled a considerable loop of the neighbouring gut, and caused obstruction and strangulation of all the parts engaged, which were much engorged; the constricting portion—*vide* Fig. 1 (D)—being of a dark plum-colour. It resembled in a striking manner a beautiful drawing, which Dr. Banks exhibited, from the collection of the School of Physic, Trinity College, which represented the strangulation of a piece of ileum by passing through a slit in the mesentery. On carefully unfolding the implicated portion of gut in the present specimen, it proved to be, however, of a different nature. The constricting piece of intestine was found to be a diverticulum—Fig. 2 (D)—opening from the cavity of the gut, one foot from the termination of the ileum, being an inch and three quarters long, and about equal in calibre to the ileum itself. From the extremity of this pouch, which resembled the thumb of a glove, a tough band passed to the anterior surface of the mesentery, into which it was firmly inserted. The strangulation was brought about by the diverticulum being rotated in such a manner, that the fibrous band passed across its attached base, so as to make a loop, through which passed nearly the entire of the intestine between the cæcum and the attachment of the diverticulum; this latter, however, acted as a kind of stop and prevented the rest of the ileum slipping through; thus a very considerable drag was exercised upon the point from which the diverticulum sprang, which, together with the fact that the fibrous band was tightly twisted round the root of the diverticulum, explained the strangulation which existed at this point.

Such diverticula are not uncommon, but usually produce no clinical signs of their existence, being merely discovered in the autopsy-room, and

recorded as 'objects of some physiological interest, being the remnant of the omphalo-mesenteric duct. The bands, which are regarded as the remains of the omphalo-mesenteric vessels, are also familiar objects. And the unusual attachments of this rudiment of the vascular system of the embryo may be explained by its being the remains of a communicating branch.—*February 13, 1875.*

Sarcoma of the Tibia.—**DR. ROBERT M'DONNELL:** I wish to bring under the notice of the Society a case with which you, Sir (Dr. E. Hamilton, who occupied the Chair), are familiar, and which I had occasion to allude to last night at the meeting of the Surgical Society. Since then the patient has died, and I am now able to give a complete history of the case. The individual was a patient of my colleague, Mr. Colles, in Steevens' Hospital. He was twenty-one years of age, unmarried, and was admitted to hospital on the 19th December, and placed under the care of Mr. Colles. Eight months before he received an injury of the right leg, resulting from accidentally striking the limb a little below the knee. He was unable to walk for a few days. After a short time he was seized with a severe pain in the inner surface of the shaft of the tibia below the knee-joint, and on the 23rd of May he was admitted. Mr. Colles made an exploratory puncture, and nothing but blood escaped. There was no evidence of any matter being beneath the periosteum, but the puncture gave him marked relief, and during the time he remained in the hospital at that period the pain entirely ceased. We had a consultation on the case, and believing it to be one certain to go on from bad to worse, amputation was counselled. At that time, however, the patient would not hear of the operation, and he left the hospital, and placed himself under a celebrated quack practitioner. We heard a rumour that he had been cured; but this was not the case, as he returned to Steevens' Hospital in December last, his limb having increased to an enormous size. It was now a great bleeding fungus; the patient suffered pain, was gradually running down, extremely anæmic, and in a dying state. Nevertheless, it was determined to amputate the limb, and this was done on the 20th of December last. After this operation he made a remarkably good recovery, as far as the stump was concerned. It healed kindly, rapidly, and well; but at the time of his admission he had some other very grave symptoms. He passed urine which, though slightly muddy, was not different from ordinary urine, having a deposit of lithate, but when exposed to air it became a dark colour, intensely deep umber-brown. It contained some albumen, but the spectroscopic examination gave no evidence of blood. We were disposed from this to think that there was some disease in the urinary passage and kidneys. About this time he was seized with a most excruciating pain in the lower part of the back. His suffering was agonising; he

had to be propped up in bed and supported; he seemed to breathe with great difficulty; yet there was no evidence of anything pneumonic or of pleuritic effusion. The chest was everywhere resonant, and the respiratory sounds distinct. He gradually became worse, run down by hæmorrhage from the bladder. A fortnight ago he became paraplegic, the remaining limb being completely paralysed as to motion, the power of feeling greatly diminished, and the power of detecting the difference between heat and cold absolutely lost; yet the reflex phenomena were tolerably well marked. The diagnosis was that there was something pressing on the cord above the lumbar enlargement. These, then, were the prominent symptoms—first, the disease in the tibia; then the enlargement of the limb on the return of the patient to hospital; and, finally, the patient dying in the way I have described. On taking away some portion of this enormous mass, which has eroded the bone in every direction, and assailed the joint, eaten into the cartilage, and infiltrated all the structures throughout, the contrast between its structure and the remarkable case of bone cancer which the Chairman (Dr. Hamilton) exhibited some time ago occurring in the femur, as a consequence of carcinomatous affection in the breast primarily, is most striking. That case was a typical example of a true carcinoma. The fibrous tissue, the loculi filled with the large cells, were well seen. This, however, is composed entirely of these small round cells which are characteristic of the rapidly growing sarcoma. The fibrous structure existing is small in quantity, and almost the entire is composed of these round cells packed together, with hardly any of the intervening spaces seen in the other specimen.

With regard to the urinary organs, we see in these fearfully diseased specimens the secret of the hæmaturia. Here are the bladder, the prostate, and a portion of the urethra. The bladder is enormously thickened, œdematous, ulcerated with deep cavities into the mucous membrane, filled with phosphatic deposits. Behind the bladder, and in front of the rectum, there is a mass similar in structure to the tumour of the tibia; it occupies the loose cellular tissue between the rectum and bladder. The kidneys are healthy; they are blanched, and the capsules are easily separated, but there are no other marks of disease. In the lungs there are nodules of deposits which are of the same character as that existing in the tibia.

I wish to draw particular attention to the point of the case to which I am now about to refer. I examined the glands in the groin with great care, and you will admit that these glands which you now see are not much more enlarged than in an ordinary subject. One mass was found of considerable size, and I cannot yet say whether it is a gland or not. It lay quite loose, and was easily detached. I dissected it out with great care, and I could not find any connexion between it and the other glands; and it is certain that these glands are not, in any great degree,

implicated in the disease. This is one of the most remarkable clinical differences between malignant sarcoma of this kind and carcinomatous disease. In carcinoma, the way it affects the system is chiefly through the chain of lymphatic glands. Had this been a case of carcinoma, these glands would have been large, hard, infiltrated, and probably filled with cancerous matter. We find in this case, however, the glands, although affected, are so to a comparatively slight extent; and the place this disease has developed itself is in the lax connective tissue in the lungs, and in the back part of the bladder, where it engages structures quite distinct from the glandular structures. I now wish to show the part connected with the paraplegia. Here is the cord which I removed to-day. I was somewhat surprised, upon pinning it out on the board and laying open the theca, not to find any tumour in the cord itself. On looking carefully along the upper part of the roots of the nerves, where he complained of the intense pain in the back, I found that two of the lower dorsal nerves have, close to their ganglia, intensely red spots. On examining the theca outside of that, there is a mass similar to what we have elsewhere, and upon raising that mass I find that these nerves pass into it, and, small as is this morbid growth, a portion of it pressing on the spinal cord at that point was, no doubt, the cause of the paraplegic symptoms, and of the excruciating pain from implicating that portion of the nerves in which the ganglia are situated. Latterly the pain was not so intense as at first. It is highly probable that as the disease went on it destroyed the nerve completely, and then the pain came into abeyance. There is one other point of clinical interest to which I wish to call attention. While the disease was making progress under the periosteum the pain was excruciating, but when the bone was destroyed the pain subsided. It was rather from the hæmorrhage from this large ulcerated surface that he cried out from relief than from excruciating pain. Another remarkable difference between malignant sarcoma and carcinoma is that, although the former attain a great size, many of them may be said to be painless. Of course it is different when a portion of the morbid growth implicates a sensitive nerve; but, as a rule, sarcoma has but a small tendency to implicate the glands, while it has a tendency to return in the connective tissue, and it is comparatively free from pain, unless under the exceptional circumstance of engaging nerves in this way.—*February 20, 1875.*

Encysted Pericarditis, communicating with the Left Pleura.—DR. FINNY said: These viscera were taken from the body of a married woman, aged sixty-six, who died in the City of Dublin Hospital on the 5th of the present month. Her history is shortly as follows:—About a year before her admission to hospital, her legs swelled, her breathing became short, and she was unable to do any work. Under treatment she recovered sufficiently to resume

her occupation, but continued to be troubled by a dry cough, which she has had ever since. She had always been a healthy woman, and, though closely questioned on the point, she affirmed she had never suffered from rheumatism or any severe illness of the heart or lungs. About four weeks before her admission the swelling again commenced in her legs, and she suffered greatly from palpitation and dyspnoea, on the slightest exertion. She always lay by preference on her left side, but could be on her back and sit up at times. The face had a cyanotic appearance; the lips and nose being of a deep inky-blue colour, and there were purpuric spots below the eyelids. The extremities were swollen, with general anasarca; the hands and feet cold and blue. The pulse was very small and quick, very hard to feel, and very irregular. The urine, though scanty, was found to be free from albumen and tube casts. Over the surface of the lungs there seemed to be a general emphysematous note of clear percussion. The back part of the left side, however, was dull, and this dullness remained in every position she assumed. The precordial area of dullness extended from the right side of the sternum, near the xiphoid cartilage, to an inch to the left of the left nipple-line.

In the whole of the same area the impulse could be felt. The impulse was very irregular, and every two or three beats a sudden sharp slap could be felt against the chest wall. She seemed for some time to improve under treatment, which was stimulant and tonic from the beginning. The right jugular vein was in a state of great varicosity, enlarged to the size of my third finger, and in it a double pulsation could be seen, and at times could even be felt. She refused to take stimulants to the amount I wished her to take, and by degrees became more torpid, and died on the 14th. On raising the sternum, I found the pericardium was adherent to the anterior surface of the heart, and I had to remove old adhesions. The anterior surface of the heart was covered by a coat of yellow fat, being principally seen on the anterior thin border towards the apex. On examining the apex of the pericardium, we found what seemed to be an encysted pericarditis round the base of the large vessels. Fluid was also found in the left pleura, and it was evident there was a communication between the pericardium over the base of the ventricles and the pleural cavity on the left side. The opening connecting the two being cribriform. The left lung was compressed by the fluid, which was of a clear colour, without any appearance of recent lymph, or of inflammation on the surface of the pleura. The anterior lower part of the lung is in a state of compression. It has gone to the state of carnification, and has none of that elastic crepitant feel which a healthy lung presents. On the right side of the pericardium, we found a bony plate; the knife grates against and will not cut it. On opening the right auricle, which, with the ventricle, was much distended and dilated, we found its walls were greatly thickened, and an atheromatous deposit was seen on the surface below the opening of

the superior vena cava. The muscular portion of the right ventricle is in a state of fatty degeneration, and the least pressure causes it to tear, and in some of the muscoli papillares the fat is arranged in layers, so that it has somewhat of that zebra appearance, which, in some instances, has been so well shown before this Society. The pulmonary valves were not altogether free from disease—one particularly; the posterior right is thickened.

The left side of the heart is also in a state of fatty degeneration of its muscular walls. The valves on this side are slightly thickened, and the mitral orifice enlarged; but not sufficiently to account for the dropsy, which was manifestly produced by the weakness of the heart. On pulling out the left lung, which was adherent in its upper and back parts by old bands of lymph, we found a white spot on the apex, apparently of a cartilaginous nature; and in the same neighbourhood, where there was adhesion, there was a slight cicatrix, and on cutting into it we found a calcareous deposit—probably a former caseous inflammation which had gone into a state of calcification. The liver presents signs of commencing disease, and indeed of former disease also. The size of the liver is diminished, and it has assumed a square shape. We find on the anterior surface signs of thickening of the capsule of the liver, and on turning to the back part the commencement of cirrhosis can be seen. It is more evident in the left lobe of the liver than in any other part. The spleen is much harder than natural. The kidneys present nothing but a hardening of their surface, but they are of remarkable pallor. The case is a good example of fatty disease and of encysted pericarditis in the upper part, which extended into the pleural cavity on the left side. It is also remarkable because of the existence of so much disease in a person who had had no serious illness until shortly before her admission into hospital. There was no syphilitic history nor any appearance of the former existence of that disease.—*February 20, 1875.*

Dilatation of Right Heart; Slaty Induration of the Lung.—DR. NIXON exhibited the lungs and heart of a woman, aged forty-six, who had been admitted under his care into the Mater Misericordiæ Hospital, suffering from capillary bronchitis. On the fourth day after admission the patient complained of severe cardiac pain; there was intense dyspnoea and lividity of the face. On examining the heart an increased area of dulness on the right side was observed, and a systolic tricuspid murmur was heard at the junction of the fifth left costal cartilage with the sternum. This murmur was accompanied by double pulsation in the external jugular veins. To obviate the danger of death from paralysis of the right side of the heart, four ounces of blood were taken from the median basilic vein. The cardiac pain was removed by the venesection, and the woman lingered on for some forty hours afterwards. At the

autopsy the left side of the heart was found empty; the chambers and orifices were normal. The right ventricle and auricle were greatly dilated, hypertrophied, and filled with black, clotted blood. The right auriculo-ventricular orifice admitted with ease seven fingers. There was no commensurate increase in size of the curtains of the tricuspid valve. The pulmonary artery was dilated, but free from atheroma. The lungs were emphysematous, and in parts œdematous; the bronchi intensely congested. The apex of the left lung presented a patch of *slaty induration*, and clusters of black granules were found studded over both lungs beneath the pleura. The condition found was similar to that described by Virchow as occurring in *peri-bronchitis chronica*. Dr. Nixon thought the specimen interesting as illustrating the development of tricuspid regurgitant murmur from acute dilatation of an already dilated chamber. It seemed evident that this had been brought about by the great obstruction to the pulmonary circulation during the acme of the capillary bronchitis which existed.—*February 20, 1875.*

Aneurism of Aorta.—DR. NIXON said: This specimen was taken from the body of a man, aged forty, who was admitted to the Mater Misericordiae Hospital on Wednesday last. The aspect of the man was that of one suffering from the last stages of phthisis. He was sweating profusely, greatly emaciated. A very decided stridor accompanied inspiration and expiration, and especially the former. On examining him, with reference to the stridor, I found there was no evidence of disease of the larynx, no tenderness on pressure, no aphonia, and no dysphagia. His pulse was 84, his respiration 24. Whilst examining his neck, I found there was a very marked pulsation of the carotids, and over these vessels and the subclavians an intense *frémissement*. On auscultating the base of the heart, I found he had aortic patency; and on examining over the carotids, two distinct tones existed in these vessels, contrasting with other cases of aortic patency which have been under my care, where only one tone existed, which, I believe, is a usual phenomenon in these cases. He had well-marked signs of bronchitis; loud sonorous râles were heard, especially over the right side of the chest; the respiration on the left being comparatively feeble. Towards the upper part of the sternum comparative dulness existed. The sounds of the heart were unusually well heard a little below the left sterno-clavicular articulations. Here the systolic bruit was audible, followed by a distinct second sound. Over the left of the chest posteriorly loud sonorous râles were heard, and at the fifth dorsal vertebra on the left side the rough murmur heard in front was also audible, and followed by a distinct second sound. If the man sat up in bed and leaned forward, he got considerable relief, but he could not lie back because of the difficulty of breathing, which resulted from remaining in that position. He had been of extremely intemperate habits,

but enjoyed good health till two months before his admission to hospital. He then complained of cough, which would seem to have been of tracheal origin; it was at first dry, then it came on in paroxysms, and was accompanied by greyish pellets of mucus, which came up with difficulty. It had a peculiar ringing character, corresponding to the tussis clangosa of aneurismal disease. The diagnosis made was aortic patency and aneurism of the transverse part of the arch of the aorta. The patient was considerably worse next day; the abnormal sounds still existed; the cough was attended with expectoration; the respiration became intensely embarrassed; and in the middle of the night he died suddenly whilst sitting up in bed. On *post mortem* examination, the aorta was found to be in a remarkable state of disease, greatly thickened, and coated with calcareous deposits. It was widely dilated above the attachment of the semi-lunar valves, which were incompetent; the edges of the valves being coated over with lymph and calcareous matter. Upon dissection, a large aneurism was found springing from the end of the transverse and descending portions of the arch of the aorta and from the thoracic aorta. In front the sac pressed against the left bronchus. Laterally, on the right side, it passed across the vertebral column, completely eroding the bodies of three dorsal vertebræ; whilst upon the left it pressed up against the upper lobe of the left lung, causing considerable thickening of the parietal layer of the pleura, and opening, by a round, ragged aperture, into the pleural sac, in which were found 3 or 4 lbs. of clotted blood. The recurrent laryngeal nerve, as it passed up between the trachea and the œsophagus, was compressed by the anterior portion of the aneurism, thus explaining the stridulous breathing which existed. The lower part of the aorta was remarkably diseased, being studded over with masses of calcareous depositions. The interest of the case consisted in the man having such an enormous aneurism, and yet no symptoms of its existence until two months before admission to hospital. It bore out an observation made by Addison, that the signs of bronchitis in cases of thoracic aneurism often mask the signs of that disease. The suddenness of the death was due to the rupture of the aneurism into a serous cavity; where an aneurism approaches a mucous surface, hæmorrhages are frequent, moderate in quantity, and not attended with such a rapidly fatal result.—*February 20, 1875.*

Congenital Malformation of the Clavicle.—DR. E. H. BENNETT exhibited three specimens of congenital deformity of the acromial extremity of the clavicle, and described them as follows:—

The specimens which I exhibit to-day are instances of a malformation of which I presented an example to this Society in 1873, and of which a woodcut is published in the fifth volume of our Transactions, and in *The Dublin Journal of Medical Science*, Vol. LVI.



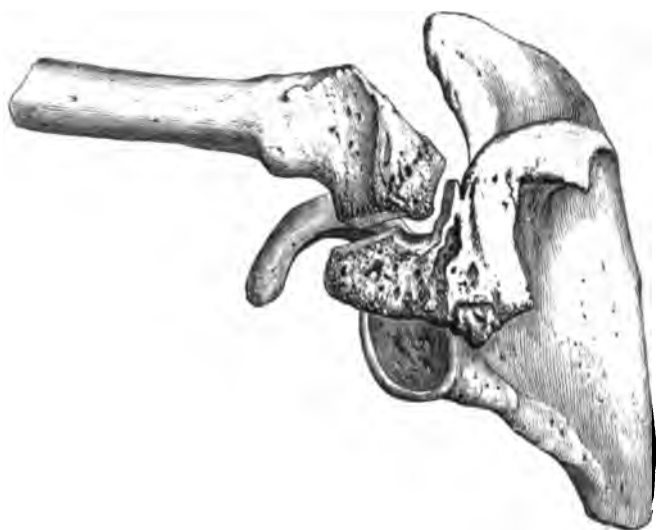
Fig. 1.



Fig. 2.



Fig. 3.



I have failed in discovering any notice of the occurrence of this deformity in any of the writers who have given detailed descriptions of the malformations of the clavicle. The recorded congenital malformations of the clavicle are mostly defects of development, absences of the extremities or of the entire bone, while in these we see excess of development—namely, an additional articular surface on the acromial end, supported on a distinct process. Since finding the specimen above referred to in the year 1872, I have had my attention directed to this point, and not unsuccessfully, for I have been able to collect these three specimens, each of which repeats the essential features of the first, while they differ more or less from it and from each other.

In the bone represented by Fig. 1 the contour of the normal acromial extremity can be traced distinctly on both upper and under surfaces, each bearing the usual marks of the insertion of the proper ligaments and muscles. The plane of the upper surface of the bone is slightly raised above the level of the shaft; from the last inch and a quarter of the posterior convex border a process projects outwards and backwards which filled the angle between the outer extremity of the bone and the spine of the scapula. A large and somewhat irregular articular surface terminates the extremity of this process. The plane of this articulation slopes downwards and forwards very obliquely, so that it must have rested on the spine of the scapula; it is separated from the proper acromio-clavicular surface by a deep furrow, which, however, is not carried completely across the external end of the bone. Where the furrow ceases the two articular surfaces run into each other. In this respect this specimen differs from all the others, for in them the surfaces are quite distinct; except in this point there is but little difference between this specimen and that figured in Vol. V., p. 252; like that, the bone is a left clavicle, strong, and fully developed with the characters of the male. The only other exceptional feature is the full development of the attachment of the rhomboid ligament. The section of the cancellated tissue of the acromial extremity shows no trace of fracture.

The bone represented by Fig. 2 presents the least striking characters of any—but little deformity, except the development of a small, but very well-marked, process tipped by an articular surface separate from the normal acromio-clavicular. In this specimen the abnormal process is developed not from the posterior convex border of the bone, but from the anterior concave border, and the articular surface on its extremity, which is very small, is directed absolutely forwards.

The next specimen, Fig. 3, presents, so far as size and general figure are concerned, but little irregularity; the extremity, however, is tipped by two articular surfaces, about equal in size, and each nearly equal to a normal acromio-clavicular articular surface. Neither of these are placed properly, however; the anterior faces more forwards, and the

posterior more backwards than the normal facette. They are set nearly at a right angle to each other, the interval between them, the actual apex of the angle, being formed by a little tubercle which fills a depression on the opposing surface of the scapula. It is to be regretted that we possess the scapulæ of two only of the four specimens I have now described, and only in the first instance a dissection of parts while recent. It will be noticed that all four specimens are left clavicles, and all probably male. In the specimen described in Vol. V. the opposite clavicle was absolutely normal, and no other malformations of the left side could be discovered. In Fig. 8 it will be noticed that the acromial process of the scapula is apparently more abnormal than the clavicle, that it projects forward and inwards, so as to place itself in front of the clavicle; this condition probably existed to a less degree in No. 2 also.

I have considered the specimens in this order intentionally, as I think the series, viewed with that published in Vol. V., suggests that the deformity is in all probability due to irregular development of the acromial process rather than to irregularity of the clavicle. In the first of the series this fault of the acromial does not readily appear, nor in the second, but in three and four it is much more evident. Comparative anatomy throws no light on the question if we seek for an explanation of the double extremity of the clavicle in the revival of some form of normally bifid clavicle. Nor do I know that such exists.

The simplicity of the development of the acromial extremity of the clavicle, the absence of any epiphysis on this part of the bone adds to the difficulty of explanation, if we consider the clavicle as the first to deviate in its growth. On the other hand, the variability of the number of ossific centres in the acromial process—normally two, and often more numerous—suggests that in its growth the first deviation is made.—*February 20, 1875.*

Ascaris Lumbricoides, extracted from an Umbilical Fistula.—DR. MAC-SWINEY: I beg to exhibit an intestinal worm, an *ascaris lumbricoides*. This worm presents nothing worthy of distinction, either in itself or as regards the clinical history of the case, with the single exception of the one circumstance, which is my justification for bringing it under the notice of the members. This worm made its escape from the body of a boy, aged seven years, selecting an unusual—if not, indeed, an unique—path for its egress. This intestinal parasite of man usually occupies, as is well known to members, the small intestines, but sometimes makes its way downwards or upwards, passing into the stomach, the mouth, the nares; sometimes being found in the peritoneal cavity, and, at other times, escaping through an abdominal abscess. It has been, in short, found occasionally in a great variety of places, but I have not seen any mention of it escaping through the umbilicus, the locality selected on

the present occasion. The boy was presented to me at the hospital having two and a half inches of this *ascaris* protruding from his umbilicus. I at once proceeded to deliver it in an artistic way, and I had to exercise some caution in the operation, lest it should break, as there was considerable tension on the creature, and it was evident that its body was tightly compressed in a track or sinus, through which it was slowly making its way out. I succeeded in extracting the whole of the worm, which is nine inches long, and a male, and it was alive when got out, moving itself quite vigorously for some time. The circumstance of its mode of escape is my justification for bringing the specimen here. It may be an interesting inquiry how the animal travelled from its usual *habitat* in the intestine through the umbilicus. Even if the idea of perforation could be entertained, it could not be held a sufficient explanation in this case, inasmuch as, with a single exception, presently to be stated, the boy had been in the most complete normal health since birth. If perforation had occurred, certain very grave symptoms would, undoubtedly, have manifested themselves. It has, however, now been completely established that this animal cannot exercise the power of perforation; its soft, three-lipped mouth is quite unfitted for that purpose, and, in fact, could not effect such an operation. Consequently the theory of perforation has been for some time exploded, and it follows that the animal must have escaped through a sinus or track of some kind. We know that several of these animals have been found in the liver; but even if I should assume that this worm had arrived at that organ, and was lodged in one of the ducts, and even if there were a congenitally-pervious condition of the ligamentous structure representing the umbilical vessels, there would still remain an intervening space of hepatic tissue to bar egress. The circumstance to which I alluded as being the one single departure from health in the boy was this. The father stated that since his birth there had been a fistulous condition of the umbilicus, and a constant discharge from it occurred. I inquired into this circumstance very closely, and failed to discover that the matter thus discharged contained any sign of blood, bile, or fæces. It was clean matter, of a yellowish colour, without any fæculant odour, or sign of blood or bile. It is not for me to attempt to say what was the actual condition which caused the existence of a sinus that enabled the animal to get out through the umbilicus; but my friend and colleague, Dr. Kelly, thinks it was probably a case of unclosed vitelline duct which communicated internally with the intestine and externally with the air, and through which the worm crept. In fact, Dr. Kelly suggests the persistence of the omphalo-enteric, or vitelline duct, which is generally obliterated at an early period of intra-uterine life. The probability of this hypothesis is increased by the occasional presence of a diverticulum at the lower extremity of the ileum, which is recognised as the intestinal

extremity of the ductus vitello-intestinalis, and by the sensation I experienced when removing the lumbricoid—of drawing it through a canal rather than through an opening communicating directly with the intestine. The normal depressed appearance of the boy's umbilicus suggests the improbability of that condition of parts which so frequently causes umbilical hernia, viz., the retention of a portion of the intestinal canal in the umbilical cord, owing to its imperfect retraction into the abdominal cavity. And the absence of any symptoms of intestinal disturbance at birth would tend to exclude the speculation that a loop or segment of the intestine had been included in the umbilical ligature. The possible formation of a fistulous communication by a process of adhesion and ulceration is rendered very doubtful by the superposition of the great omentum, and the great improbability that the adhesion should occur at the umbilicus rather than at any other portion of the abdominal walls.—*February 27, 1875.*

Bony Degeneration in Eye.—MR. WILSON said he was consulted lately by a man, aged forty, for blindness, who gave the following history of his case:—When a child he suffered from injury of the left eye, in consequence of which he became blind of that eye, and of late his right eye, which had been previously healthy, began to go, till he eventually became blind of that also. The right eye presented nothing abnormal externally; the cause of disease was internal altogether. On the left side there were the remains of an eyeball, a shrivelled and collapsed stump, presenting a mere mass of tissue moved by muscles. On examination this stump was found very hard and tender to the touch. The man said he repeatedly suffered from attacks of pain and uneasiness in it. Considering that the blindness on the other side was, to a certain extent, attributable to irritation propagated from this stump, although it had existed in this condition for thirty years, apparently without doing mischief, I proceeded to remove it, first diagnosing bony metamorphosis in the stump. This diagnosis was confirmed, for, on opening the globe, one of the largest masses of bone I have seen in an eye presented itself. It consists of a closed cup posteriorly, composed completely of bone, the anterior opening being closed in by calcareous remains of the lens, connective tissue, and some bony structure. We have the remains of the choroid now represented generally by connective tissue. Of the retina I can find no trace. These bony growths are generally perforated posteriorly, corresponding to the optic nerve, for the transmission of the retina. I could not find any trace of this opening, but there was a prominent spur of bone where the perforation should have been. The mode of origin of these bony growths is peculiar. In consequence of injury or idiopathic disease choroiditis is set up, which gives rise to effusion between the retina and the choroid, generally of fibrinous

matter; the retina is detached from the choroid; the effusion products become organised, and finally bony. It is not primarily a bony growth, but occurs subsequently as the metamorphosis of this plastic exudation. We see this from the fact that these bony plates take the shape of the shrunken eyeball; the eyeball shrinks first, then the bony growth occurs, and it receives its impression from the muscles. These bony growths are not in the choroid, but are external to it. I have another specimen here, removed by Mr. Rainsford about the same time, which presents a beautiful example of the commencement of this bony growth. Near the optic nerve is a small plate of bone situate on the choroid, but connected to it by a vascular membrane, on perforating which a probe may be passed between the choroid and the neoplasm. In this case the disease is only of a very few years' standing, and has not had time for further development. The reason why some are flat and some cup-shaped is, that, when the ciliary body has lost its function of secreting fluid, the muscles exert unopposed pressure upon the eyeball, which collapses to a greater or less extent, and the effusion between choroid and retina, in which the osseous metamorphosis takes place, adapts itself to the shape of the eyeball. These stumps remain quiescent for years, but when the bony growth reaches forwards to the ora serrata, the ciliary nerves become irritated, and sympathetic irritation sets in in the second eye. In Mr. Rainsford's case, the sight, which had been gradually declining, was restored in about a week after the removal of the specimen now exhibited.—*February 27, 1875.*

Stricture of the Urethra; Internal Urethrotomy.—**DR. THOMSON:** This specimen consists of a portion of the penis and bladder of a man who died of phthisis, in the Richmond Hospital, on Thursday last. He was admitted on the previous Thursday, having been sent from the Whitworth wards (where he was under treatment for phthisis) suffering from retention of urine. The history he gave was that on that morning, between five and six o'clock, while endeavouring to pass water he suddenly felt something give way in the perinæum, and suffered afterwards considerable pain. He was not able to relieve his bladder, and he sent for one of the resident pupils, who tried to pass a catheter, but without effect. He was subsequently treated with baths and opiates, and finally sent down to the Richmond Hospital. At one o'clock I tried to pass a small catheter, and also a very fine hair bougie, but neither would pass. He was sitting up in bed; he had an expression of agony, and said he felt great pain about the perinæum, and stretching from that up to the abdomen. There was a small tumour in the perinæum, and the scrotum was somewhat infiltrated with urine. The tissues around the root of the penis were slightly swollen. I ordered him a warm bath and opium, and saw him in an hour afterwards. I again tried to pass a catheter, but without

success. I then summoned a consultation of my colleagues, which was held immediately, and it was thought that, although there was no doubt some urine had got into the tissues, the case was not yet bad enough for the making of incisions, and it was hoped the treatment by baths and considerable doses of opium might bring the man into such a condition as would enable us to pass an instrument. We re-assembled at nine o'clock. I again tried to pass the catheter and bougie without success. My colleague, Mr. Stokes, however, was fortunate in passing the fine flexible guide of Maissoneuve's grooved staff for internal urethrotomy. I had determined, if we did not succeed in getting the instrument into the bladder, to perform Cock's perineal operation, but, having passed an instrument, we agreed that it would be best to divide the stricture internally. I was then enabled to pass a No. 8 catheter with great facility, and to evacuate the bladder. Eight ounces of urine came away. At this visit a gangrenous spot had appeared on the prepuce. I at once made very free incisions in the perinæum, in the scrotum, and along the penis. On the next morning I saw the patient. He was considerably better; the scrotum had diminished in size; the rugæ were beginning to return; the tongue had become moist, and the pulse quiet; and the temperature had gone down to its normal standard. So matters went on for several days, the catheter being allowed to remain in, and the constitutional symptoms gradually disappeared. The incision through the gangrenous spot had the effect of stopping any sloughing that was threatening in that quarter. Three or four days after, when, so far as the local symptoms were concerned, nothing could have been more favourable, the chest symptoms became prominent, and gradually the man sunk, till on Thursday he died. Both lungs gave unmistakable evidence of cavities, and were in an advanced condition of phthisis. The specimens which I exhibit had to be removed by section through the perinæum. We see the urethra and the thickened bladder, the latter thickened from a long-standing stricture which had existed here for nineteen years. On the upper portion of the urethra you see the line of one incision by the knife about an inch long, and an inch and a half in front of the membranous portion of the urethra. Then there is an unwounded part, and behind that the line of incision through a stricture just touching upon the membranous part of the urethra, from the bulbous. On the right side of the urethra is the cavity of a chronic abscess, which pressed upon the membranous and bulbous portions of the canal, and in which a small walnut would have fitted. Communicating with this abscess is a small opening in the membranous tract through which I passed a probe, and, probably, this was the seat of the rupture when the patient felt something snap in the urethra. It is probable that the abscess had thrust its wall towards the urethra, and that in the effort made the urethra burst. I have not, however, been able to see any opening from the cavity of the

abscess into the parts beyond. The other wall of the abscess has been destroyed in the removal of the organ from the body, and probably in this some opening occurred through which the extravasated urine passed. The case is interesting as showing us the condition of the urethra after the operation of internal urethrotomy.—*February 27, 1875.*

Hypertrophy of the Heart.—DR. HAYDEN said: The specimen which I now exhibit is associated with some interest diagnostically. The case was a very ordinary one—a case of albuminuria. The patient, who was forty years of age, a labourer, of intemperate habits, was admitted to the Mater Misericordiæ Hospital on the 16th of January. He was anasarcaous, the urine highly albuminous and of low specific gravity. It was found impossible to get rid of the dropsical effusion. At an early period I detected a phenomenon, connected with the heart, which had great interest for me—namely, a doubling of the first sound. It was one of the best examples of the reduplication of the first sound which I have ever seen. On the occasion of an examination at the hospital by the Censors of the College of Physicians, I called Dr. Kennedy's attention to it. From this phenomenon I confidently diagnosed simple hypertrophy of the left ventricle of the heart, in which the walls are thickened, without alteration in the capacity of the ventricle. The man died of uræmic convulsions. The morbid specimen, now exhibited, shows that such was the condition of the left ventricle. The walls are considerably thickened, the septum projecting into the right ventricle, whilst the cavity is not lessened in size.—*February 27, 1875.*

Traumatic Stricture of the Urethra.—DR. E. H. BENNETT said: The specimens on the table have been recently removed from the body of a Swedish sailor, who died this week in Sir P. Dun's Hospital. They are of interest as illustrations of the disastrous effects of stricture of the urethra, caused by direct injury to the canal, and they illustrate further the rate of progress to a fatal issue that the pathological changes may follow.

The patient, a young man under thirty years of age, in all respects healthy previous to the injury, was wounded on board ship by the slipping of an anchor, which he, with others, was securing. The accident happened fifteen weeks before his admission to hospital. In falling, the anchor crushed his right leg against the deck, fracturing the tibia and fibula, and, at the same time, two turns of the coiled rope attached to it struck him in the perinæum. It was not possible to determine with certainty, from the history or by examination of the parts, the exact details of the perineal wound. No surgeon treated the case in the early stage, and there clearly had not been at any time urinary extravasation to any extent; nor had retention of urine ever occurred until after the patient's admission to Sir P. Dun's Hospital. The vessel,

at the time of the occurrence of the accident, was off the coast of South America, and the patient never left her for more than a few days at some foreign port until she arrived in Dublin.

He applied for relief at Sir P. Dun's Hospital, for the condition of his limb rather than for his urinary trouble. The fractures of the leg were ununited, and he was unable to make any but the poorest attempt at movement, even with the support of crutches, in consequence of the pain the exertion caused in the limb. I propose, at a future meeting, to submit the details of the fractures to the Society, but, to-day, I desire to show the urinary organs while they are perfectly unaltered by decomposition. I have not had time as yet to complete the examination of the fractures. The condition of the urinary organs was, at the time of the patient's admission to hospital, this :—The patient could pass water with difficulty, and the stream from the fistula seemed larger than that from the meatus. The fistula was placed far back in the perinæum; a probe passed obliquely forwards through it, and could, with some difficulty, be made to strike a metallic instrument passed down to the front of the stricture through the urethra. No instrument could be passed either by the normal route or by the fistula towards the bladder. The urine being to all appearance passed with moderate freedom, and the condition of the ununited fractures being the more prominent cause of suffering, I resolved to direct the treatment to the latter at first, and, if successful, deal subsequently with the stricture by perineal section. The man's health seemed fair in all respects, except that he was extremely thin and pale from long confinement on board ship. I put the limb up in a starch bandage, carefully applied and of sufficient strength to completely fix the fractures. The amount of displacement of the fragments was not sufficient to justify any attempt to straighten the limb by resection, and the length of time which had elapsed since the occurrence of the injury was such that it was hopeless to gain anything by attempts at extension. The best course appeared to be to endeavour to obtain union of the fractures in their existing positions. There did not appear to be any cause for non-union, except the want of proper rest.

After four weeks of treatment by the starch bandage it was evident that the fractures were becoming consolidated, although the union was not yet so firm as to justify any relaxation of the treatment. At this time the patient's urinary troubles appeared to be increasing, and, above all, he suffered more or less constantly from pain in the left loin, and from fits of renal colic. After two weeks further, the progress of union of the fractures being satisfactory, I determined to let the patient go about on crutches, hoping to improve his health and put him in a condition to bear a division of the stricture. The attempt to go on crutches, or even to move out of bed to a seat, seemed to aggravate his trouble, and on one occasion was followed by a rigor. Next, after a severe attack of colic,

retention of urine occurred, and was with difficulty relieved, as no instrument could be made to pass the stricture. In an attempt to introduce a fine flexible instrument, I found that it doubled on itself in the urethra, and on withdrawing it, I found a small calculus lying in its loop with some viscid mucus. The retention was in great measure relieved, and on each subsequent day small grains of gravel and hemp-seed calculi came away.

This state of affairs determined me in operating at once for the relief of the stricture. I cut down on a metallic sound in the urethra, passed to the face of the stricture, laying open the perineal fistula by my incision. Bearing in mind the quantity of gravel recently passed, I hoped to find the path to the bladder, by its assistance, should any be present. Almost at once, on seeking for the urethra behind the stricture, I found it by seeing and feeling grains of gravel. A probe passed readily to the bladder, and I at once passed a flexible instrument of full size through the wound to the bladder and secured it. The anterior segment of the urethra was separated by so wide an interval, and so displaced, that I preferred to postpone the introduction of an instrument by the meatus until the parts around my section were sufficiently consolidated to avoid extravasation.

A few days after the operation I was able to pass a flexible catheter from the fistula, both ways, to the bladder and to the meatus, and thus to re-establish the canal. Some days after all this manipulation had been done, without any reason to fear an unfavourable issue to the case, I was suddenly summoned to the patient in the evening, and found him in great agony from a violent attack of pain in the left loin. Shortly after he suffered extreme collapse and an extension of pain over the whole abdomen. Next morning the collapse was replaced by all the signs of peritonitis, which rapidly terminated his life. We see here the cause of the accident—the left kidney was surrounded by an abscess which communicated with the upper part of its pelvis, and lower down, as the vis contracts into the ureter, a calculus of the size of a filbert is seen impacted in the tube. Again, in the left meso-colon, which is fixed over the abscess, a small opening exists, and from this the contents of the abscess were poured into the peritoneum. The opposite kidney, though thin and flabby, is not materially altered. The bladder shows the usual appearances of cystitis, with hypertrophy of its walls, and a contracted neck. The colour of the mucous membrane is a dark maroon red, the deepest shades of colour being laid on the most prominent points of the membrane—several small calculi, of flattened irregular shape, lie in its neck. All these calculi, and those previously voided, are alike and similar to that which is impacted in the ureter. They are composed of bone-earth phosphate. It is clear that they have all passed from the left kidney. The seat of the operation presents but little

to be noticed. The perineal wound is contracted to small dimensions, and the stricture through which the section lay, and in which the catheter had rested for some days, presents a smooth surface continuous with the mucous membrane of the urethra at either side. The urethra appears to have been completely divided, either by the wound or by a process of sloughing resulting from it.

The fatal issue in this case appears to have been due to the rupture of the renal abscess into the peritoneum, a rupture probably determined by the accidental impaction of a calculus in the ureter.—*February 27, 1875.*

Softening of the Brain from Occlusion of the Middle Cerebral Artery; Aphasia.—DR. JAMES LITTLE said: This brain is, I think, worth showing to the Society, as bearing upon the localisation of brain disease. The man from whom it was taken came under my care in the end of November last. He was thirty-five years of age, and had been by profession a trapeze dancer. In the previous June he was performing in Glasgow, and one day, when walking in the street, was suddenly seized with numbness in the right arm and leg. This numbness never completely left him, but it had this peculiarity, that it varied a good deal from time to time. It often got a good deal better, so that he would think he was going to get well, and then it returned again. Soon after his first seizure with the numbness he had a fit, and was for a minute unconscious, and afterwards noticed a failure of his sight, which was the symptom for which he sought the aid of my colleague, Mr. Swanzy, through whom he was admitted to the Adelaide Hospital. About two months after his first illness another symptom, in addition to those I have mentioned, showed itself, which he very well described himself as the "staggers." When he came into the hospital he rocked forward as a drunken man does, swaying from side to side, and as if he would pitch forward on his head. With reference to the failure of his sight, ophthalmoscopic examination revealed atrophy of the optic disc on both sides. During the first month of his stay in hospital he had several slight epileptic seizures, and also frequently drew our attention to other symptoms that annoyed him. One was a peculiar, uneasy feeling in the right side of the chest, for which there was nothing in the condition of the thoracic viscera to account, and the other was that he always had the smell of fragrant flowers. When about a month in hospital something went wrong in his head. He remained in bed for several days; was in an unconscious state; would not take any food, and appeared likely to die, but his strength was kept up by the administration of food by the rectum. He got out of this state, however, and was able to rise and walk about the ward. The numbness continued, the staggering gait remained; there was incomplete right hemiplegia and complete aphasia. He knew everything that was said to him, and tried to answer and to convey his

meaning, but failed to do so, sometimes using articulate language, but not the words he meant to employ. A few days ago he threw himself from one of the windows, and the mode of death was such as to make the examination of the brain very difficult. He fell directly on his head, and sustained a severe comminuted fracture both of the vertex and of the base of the skull, from which he died in a few minutes. The part of the brain affected is that in which we would naturally expect to find disease—in the area supplied by the left middle cerebral artery. I gave it as my opinion that it was a case of thrombosis. The gradual occurrence of the symptoms, and the variation in their intensity from time to time, were the grounds on which I based this view, and there was no doubt about the localisation. The appearance is well seen here; the left middle cerebral artery is blocked either by an embolus or a thrombus—I think the clinical history makes it more probable that it is a thrombus—the left middle cerebral artery is completely occluded by this little plug, and the carotid is dwindled down to the size necessary to convey the blood to the anterior cerebral artery. The brain in this neighbourhood is quite diffuent and softened, as compared to the other side. The third frontal convolution, to disease of which the existence of aphasia has been ascribed, is not softened. We are more correct, then, in simply saying that aphasia is present in cases in which the region of the brain supplied by the left middle cerebral artery is affected.—*February 27, 1875.*

CLINICAL RECORDS.

Notes from the Wards of the Cork Hospitals. Communicated by MR.
MARTIN HOWARD.

ST. PATRICK'S HOSPITAL.—*Case of Hypertrophy of the Tongue; Excision.*
Under the care of STEPHEN O'SULLIVAN, M.D., M.Ch., Surgeon to
the Hospital.

Nano C., aged sixty-five, married, and the mother of six children, two of whom only are now living, was admitted into St. Patrick's Hospital on Saturday, 15th May, 1875. She stated that about thirty years ago an eruption, which Dr. O'Sullivan is disposed to think was of a syphilitic character, broke out in various parts of her body, and for this disease she went through a course of mercurial treatment, which caused profuse salivation. Since the date of that attack she enjoyed only middling health, and twelve months ago her tongue began to enlarge and protrude through her mouth, the enlargement and protrusion continuing to increase up to the day of admission.

The patient seemed weak, and looked much emaciated. The face, neck, and upper part of the sternum were covered with extensive cicatrices, lupoid in appearance. She had lost all her teeth, and the soft palate, and also portions of the alæ and septum of the nose were partially destroyed by ulceration. The tongue protruded as far forwards as the mental symphysis, the circumference of the widest part, which was about the centre of the protruded portion, measuring five to six inches. The organ had a dry, pulpy, granular feel, the papillæ were greatly enlarged, and it was purplish in colour. The lower lip was completely everted, and the depression of the angles of the mouth gave a peculiar long-drawn expression to the countenance. The saliva was continually dribbling from the mouth, and the articulation was quite indistinct, and perfectly unintelligible. Deglutition was troublesome, and there was diminished sensibility of the protruded portion of the tongue. Operation having been decided on, upon consultation with Drs. Shinkwin and Hobart, the last day of May was fixed upon for the removal of the protruded portion of the organ. The patient was NOT put under the influence of chloroform, or any other anæsthetic. A piece of whip-cord having been passed through the apex of the tongue, by means of which the organ was held well forward, oblique lateral flaps were made on either side, the incisions meeting in the centre. With a view to the

prevention of hæmorrhage, as well as to accelerate the operation, and to lessen the pain of the working of the *ecraseur*, the lateral incisions were made partly with the knife, and completed with the wire *ecraseur*—the knife having been used to divide the upper and lateral surfaces of the tongue, and the *ecraseur*, worked in the line of the incisions, completing the excision through the under surface containing the vessels. The portion of the tongue thus removed measured about three inches from apex towards the base. The lateral flaps were then united by one hare-lip pin, which was passed deeply through their substance, and thus arrested all oozing of blood. A few interrupted silk sutures were applied to the more superficial parts. The operation throughout was attended with scarcely any hæmorrhage.

The following day the pin was removed. There was some slight swelling of the tongue, which, however, speedily subsided.

The wound was healed on the ninth day, all the sutures having been previously removed. When last seen, on the 30th June, the everted lower lip had nearly regained its normal state, straps of adhesive plaster having been used to draw it upwards; the tongue was quite cicatrised, and the articulation, deglutition, and general health of the patient had considerably improved.

NORTH INFIRMARY.—*Case of Traumatic Tetanus, treated by the Extract of Calabar Bean and Hydrate of Chloral Enemata.* Under the care of THOMAS C. SHINKWIN, M.D., M.R.C.S.E., Surgeon to the Infirmary.

Joseph H., aged nineteen, was admitted into the North Infirmary a little after 7 o'clock on Tuesday, 2nd February, 1875.

H. was employed as gas-fitter in one of the amusement halls in the city, and about half-past six o'clock that evening the attendants noticed that gas was escaping somewhere. H. went round with a light in his hand to try and discover the cause of escape, but having unguardedly brought the light too near the pipe, the gas flared out on him, depriving him of his presence of mind to such an extent that, from the gallery where he was, he jumped to the ground, a distance of twenty feet.

Hearing him cry out for assistance, some persons ran to the spot where he had fallen, and at once removed him to the hospital.

The sleeves of the jacket he wore, as well as his shirt-sleeves, were entirely consumed; and on examination it was found that the cuticle had been regularly burnt off the whole of the right upper extremity from the tips of the fingers to the middle of the scapula. The left upper extremity had been similarly, though not so extensively denuded, the hair in the axillary space having been scorched so as to crumble to the touch, but the skin, for about four inches downwards, being quite intact. The neck, ears, and eyes escaped, the eyelids not even being injured, but the cuticle had been completely removed from the forehead to the chin.

The sufferer was in a state of great depression, shivering with the cold, and complained of intense pain.

The hands were immediately enveloped in dry wadding, and the face was covered in the same manner, holes being made for the eyes, nostrils, and mouth.

Equal parts of brandy and water were administered at intervals, and half a drachm of tr. opii given at nine o'clock.

February 3rd.—Passed a fair night; pulse (temp.) 96; breathing slow.

The patient got on very well during the day, and partook of some beef-tea, but, as the next report shows, the period of reaction set in that night.

February 4th.—Restless night; complains of great pain about the arms; tongue dry, brown, and cracked; pulse, 105; temp., 100°; resp., 26. Ordered half-grain doses of opium every four hours.

February 6th.—Condition very drowsy; pulse 110; dressings removed, where the discharge took place, and dry wadding again applied as before. The pills were ordered to be continued.

February 10th.—Complains of pain in the right hypochondriac region; some traces of blood noticed in the stool procured by a purgative draught; tenderness over the epigastric region, and vomiting, with occasional hiccup; pulse 120; pills to be continued, and to take a tablespoonful of mist. cit. potass. every third hour.

Old dressing removed in the places where loose and saturated with the discharge, and dry wadding renewed.

February 16th.—Passes quiet nights now, and is tolerably free from pain; pulse 98; sloughs have nearly all come away.

The following ointment was ordered to be spread on dry wadding and applied in the places where the sloughs had fallen off, instructions being given at the same time to have the new dressing at hand to put on the moment the old dressing was removed:—

R.—Acet. plumbi, ʒi.

Ung. resinæ, ʒss.

Adipis, ʒvii. m.

Fiat ung.

From this date the burned surfaces began to show a tendency to granulation, and the general state of the patient was satisfactory.

On the night of the 20th February the nurse, in answer to an inquiry as to how he was progressing, remarked that she noticed him yawning a great deal during the day, and next morning the following notes showed that the suspicions roused by this fact were about being confirmed.

21st February.—Yawned very much all night, and sighed often during the sleep he had fallen into early in the morning. Finds the back of his neck unusually stiff and difficult to move, and "felt a sort of

catch" (this was how he described it) in opening his mouth to chew the bread at breakfast.

Dr. Shinkwin then ordered a grain of the extract of Calabar bean to be given every two hours, and neither that night nor the following morning was the medicine observed to produce any sensible effect upon the pupil, though towards evening the rigidity about the neck increased very much, and the difficulty in opening the mouth became greater.

A little after noon on the 22nd he got a spasm for the first time, which he described as being ushered in by losing his breath, and then creeping upwards across his chest and down the right leg. He felt drowsy, but could not sleep owing to a dread of the spasm coming upon him during rest, and complained much of a smarting pain in the burned parts of the body, especially in the arms, and of a tightness across the chest.

At this period a death occurred in Dr. Shinkwin's family, and the case came under the care of Dr. O'Sullivan, Assistant-Surgeon to the Infirmary, who saw the patient on the morning of the 23rd, and ordered the burnt surfaces to be dressed with the following ointment:—

R.—Ung. zinci oxid, ℥ii.
Pulv. opii, gr. iv.
Glycerini, ℥ss. m.
Fiat ung. M. D. U.

He also directed the pills to be given every hour, and an enema containing ℥ss. of chloral hydrate to be administered at once, and repeated in six hours.

Next day the report was as follows:—Half an hour after the first enema the patient fell asleep, from which he awoke after four hours with a severe spasm, causing complete opisthotonos. He also slept after the second enema, and in the same way was disturbed about six in the morning with a spasm; pulse, 99; temp., 101°; rigidity very great, the abdomen being quite hard; risus sardonius well marked; pupils slightly contracted; mouth barely a quarter of an inch apart; no pain from the burnt surfaces; deglutition difficult; breathing slow.

A grain of the extract of Calabar bean was ordered every half hour, the chloral enemata to be repeated as before, and the patient not to be awoken, if asleep, when the time for giving the pills came round.

A half grain was given for four turns, after which, the enema having been administered, he fell asleep, and slept without intermission for one hour, at the end of which time he awoke with a severe spasm and violent opisthotonos, lasting from three to four minutes. Two grains were then taken, and sleep was soon after procured, which continued until the time for the second enema arrived, when he was once more disturbed by a spasm.

25th.—Slept well up to 6 a.m., when he awoke with a very violent spasm, recurring every half hour, and leaving him much prostrated; respiration, 24; pupils dilated; pulse, 110; temperature, 103°; skin moist; mouth not so much apart as on the previous night; sores looking healthy, but during the dressing he got a spasm, which was accompanied with opisthotonos. A grain pill was ordered every quarter of an hour, and the enemata were ordered to be repeated as before. Sleep followed both enemata, which was not disturbed to give the pills, but during three out of the ensuing twenty-four hours he took a grain every quarter of an hour; the average during the remainder of the time being a grain every hour.

On the 26th there was a decided improvement for the better in the general condition of the patient, the spasms being less severe and less frequent than before. The pupils were slightly contracted, the pulse was 104, the temperature 102·8°, and the mouth could be opened with somewhat more freedom. The enemata and grain doses of the pills every half hour were continued to the 1st of March, on which day Dr. Shinkwin again took charge of the case. No alteration was made in the treatment that day, but on the next, owing to the extreme drowsiness of the patient, the enema of chloral given at bedtime was omitted. Next morning, however, it was reported that he had spent a very bad night. The spasms were frequent and violent, perfect opisthotonos being produced. The pupils were widely dilated, the pulse was 120, the temperature 104·6°, and he complained of great pain from the burnt surfaces. The rigidity of the neck, chest, and abdomen had increased considerably, and the mouth would barely admit the forefinger. A chloral enema was given at once, which procured sleep; but though the pills were still ordered every half hour, two hours were let pass without disturbing him, and then he got two grains in one dose. The enema was repeated at night, and next morning there was a great abatement in the severity of the symptoms of the previous day. He had only two spasms during the night, the rigidity was less, and he had not near such difficulty in opening the mouth. The breathing was slow. On the 6th March the pills were ordered to be given only in grain doses every hour, on the 8th every two hours, on the 10th three times daily, and on the 12th they were given once a day, and finally stopped on the 15th, the tetanic symptoms having by that time completely subsided. One of the chloral enemata was then also omitted, and on the 18th the other enema was likewise discontinued.

He continued in hospital, however, up to the 15th May, the burnt surfaces not having as yet healed in; but at this period the granulations had become very healthy, and the healing process went on rapidly under the use of the lead and resin ointment, no contraction resulting.

Throughout the patient's strength had been well supported by the

mistura vini Gallici, wine, chicken broth, &c., and, when necessary, the bowels were relieved by purgative enemata.

During the past twelve months several cases of traumatic tetanus have occurred in the North Infirmary, Cork, full particulars of which will be found in the pages of the *Irish Hospital Gazette*. All these cases have been almost exclusively treated by the extract of Calabar bean, and we have now for the first time to record a case in which both Calabar bean and chloral hydrate were freely and fairly used. As we have published our successes, so, too, we have published our failures; and in the reports referred to above we have had occasion to speak in very high and laudatory terms of the excellence of Calabar bean in the treatment of tetanus. The language employed in our recommendation of the drug was not (we feel called upon to state) written at random, or with a want of that due caution so essential to the well-being and progress of science; it was language based upon personal observation and confirmed by actual experiment, and the statements made were such as clinical experience at the same time justified and corroborated.

The case in question was a very heavy one, for the primary injury was of a serious character, and the tetanus that resulted was as acute and violent as could be seen in the wards of any hospital in the kingdom. Calabar bean having been administered in the treatment of it, and the issue having been successful, it is only rational to give Calabar bean the credit of bringing the case to so satisfactory a termination. But some one may ask—What about the chloral hydrate? Had this nothing to do with the final result? To which we would be disposed to answer, that, in our opinion, Calabar bean was the agent, and chloral hydrate the adjunct. Persons may say, however, that it was chloral hydrate effected a cure, and, of course, a good deal may be said on both sides of the question; but, while we give Calabar bean the preference, we would not for one moment think of denying the possibility of the case terminating fatally, suppose the chloral hydrate not to have been given at all. In point of fact, chloral hydrate impressed us most favourably in the treatment of this frightful and fatal disorder, and the magic influence it at times exercised called forth our greatest admiration—so much so, indeed, that from having hitherto recommended Calabar bean, and Calabar bean alone, in cases of tetanus, we would now recommend with confidence a combination of both. We would wish here to refer to a case of traumatic tetanus reported in the last number of the *Irish Hospital Gazette* by Dr. T. E. Little, which was likewise treated by Calabar bean and chloral hydrate.

There can be no question but that Dr. Little gave a full and fair trial to Calabar bean, and its failure in his hands is certainly a strong argument on the side of those who would be disposed to think that in the case above reported it was chloral hydrate that did the good. Compara-

tively, indeed, the cases may well excite differences of opinion, and, undoubtedly, we must confess that, in this instance at all events, we cannot say we gave Calabar bean as fair a trial as we have done on former occasions, and as Dr. Little gave it in the case he had under his charge. Exclusive treatment of traumatic tetanus by Calabar bean alone, or chloral hydrate alone, and a collection of the various results, can only decide the matter one way or the other. Those who have faith in the one remedy may try it; but what we would feel disposed to recommend would be the employment of both. We should prefer, however, administering the chloral hydrate in the form of an enema, as in this way, like opium, its action is quicker and stronger; and furthermore, it is not at all impossible, but highly probable—for instances are on record—that the mere fact of swallowing the fluid when the symptoms are at their acme might produce a spasm that would carry the patient off.

Again, as we have frequently stated, and as has been confirmed by Dr. Little and others, the dose of Calabar bean given in text-books must not for one moment be adhered to in the treatment of this disorder, and the man who hopes to cure a case of tetanus by the small doses text-books allow, hopes, in our opinion, to do an utter impossibility. By pushing the drug with the disease, until even a grain every quarter of an hour is taken, if necessary, the prescriber can alone hope the drug to realise the expectations we would have him entertain respecting it. We agree, too, with Dr. Little, that the pupil is not much to be depended upon, for from our experience we have found that it is only when a very large quantity has been taken contraction results, and this contraction sometimes lasts for so short a time as might readily deceive an ordinary observer. We think, however, that as an indication for increasing the dose the pupil may be regarded as of some value, for we have noticed that as soon as ever a quantity sufficient to affect the system had been taken, the pupils contracted, and the minute its effect passed away they immediately dilated. Hence the great point—to keep the pupils contracted. The purity of the Calabar bean is another point to which we would direct attention, and it would be well for the prescriber to see that the drug is fresh, unadulterated, and of good quality, before he orders it to be administered.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks, ending Saturday,
July 17th, 1875.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Small-pox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	674	486	—	5	7	1	1	9	11	20·1
Belfast, -	182,082	516	388	—	26	27	2	5	11	12	27·7
Cork, -	91,965	"	"	"	"	"	"	"	"	"	"
Limerick, -	44,209	79	62	—	2	—	—	1	3	1	18·2
Derry, -	30,884	52	61	—	—	17	—	1	—	—	25·6
Waterford, -	30,626	64	38	—	—	—	—	—	2	—	16·1
Galway, -	19,692	32	25	—	—	—	—	—	—	—	16·5
Sligo, -	17,285	27	29	—	—	—	—	—	—	—	21·8

Remarks.

The returns from Cork were incomplete for two out of the four weeks under consideration. The death-rate was high in Belfast and Derry; moderate or low in Dublin and the other towns. In Dublin 70 deaths from zymotic diseases were registered, of which 62 occurred within the municipal boundary. Measles, scarlatina, fever, and diarrhoea were the most fatal affections of this class, but the mortality from them was by no means high. In Belfast, on the contrary, the zymotic death-rate was very considerable—measles and scarlatina still showing a marked epidemic tendency. Scarlatina was very fatal in Derry—no fewer than 17 out of 61 deaths having been caused by this disease. The wet, cool weather has kept down the mortality from diarrhoea everywhere. The Registrar of Sligo District states that one of the deaths registered during the week ending July 10 was of a person aged 106 years. In London the death-rate for the four weeks was 21·4 per 1,000; in Glasgow it was 25·0, and in Edinburgh, 22·5 per 1,000.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for Month of June, 1875.*

Mean Height of Barometer, - - -	29·858 Inches.
Maximal Height of Barometer (9 a.m. on 1st),	30·258 „
Minimal Height of Barometer (9 a.m. on 15th),	29·119 „
Mean Dry-bulb Temperature, - - -	56·6°
Mean Wet-bulb Temperature, - - -	53·0°
Mean Dew-point Temperature, - - -	49·8°
Mean Humidity, - - -	78·3 per cent.
Highest Temperature in Shade, - - -	71·4°
Lowest Temperature in Shade, - - -	43·2°
Lowest Temperature on Grass (Radiation), -	38·8°
Mean Amount of Cloud, - - -	65 per cent.
Rainfall (on 20 days), - - -	2·989 Inches.
General Direction of Wind, - - -	W. and S.W.

Remarks.

At the beginning of the month an anticyclone lay over the British Isles, and the weather was bright and fine. On the 3rd, however, barometrical pressure gave way; and from the 5th a constant succession of areas of low pressure skirted our N.W. coasts, travelling to N.E., and causing frequent rains with occasional high winds. The month was consequently wet and broken, with cloudy skies and but little sun or warmth. Thunderstorms occurred on the 11th and 16th, and thunder was heard on the 10th and 12th. Hail fell heavily on the 10th, as well as on the 11th and 12th. As usually happens, the heavy showers which were felt in Dublin did not prevail at Kingstown and its neighbourhood; hence the Dublin rainfall was heavier than that registered a few miles to the south-eastward—at Eccles-street it was 3·19 inches; at Monkstown, 2·29 inches; at Dean's Grange (Monkstown), 2·50 inches, and at Fassaroe, near Bray, 2·47 inches. The rainfall at 40, Fitzwilliam-square, West, Dublin, for the six months ending June 30, was 10·726 inches, distributed over 101 days.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

ARSENIC IN DIABETES MELLITUS.

DR. SAMUEL V. PAP contributes to the *Wien. Med. Presse*, Nos. 13 and 14, the results of his experience in the treatment of diabetes, particularly as regards the use of arsenic in this affection. He finds that this remedy exercises a decided influence in diminishing the pathological excretion of sugar, whether this be due to excessive sugar-formation in the system or arrested metamorphosis of the normal sugar. In many cases the use of arsenic causes the sugar to disappear entirely from the urine; naturally, the various other symptoms of diabetes—thirst, dryness in the mouth, increase in the amount of urine, weakness, &c. The favourable effect of arsenic is more noticeable in those lighter cases of diabetes where the sugar present in the urine does not rise above 4 per cent. The diminution or disappearance of the sugar takes place even while mixed diet is used, but at the same time it is advisable to use as little starchy food as possible. After the use of arsenic has been suspended, months may elapse before the diabetic condition again makes its appearance; nevertheless, the use of this remedy does not protect against relapse. No unpleasant effects are observed from the prolonged use of the arsenic; the appetite remains unaffected, and even, in many cases, is improved. As a contra-indication, may be mentioned the highest grade of the disease with progressing pulmonary tuberculosis. The arsenic was administered in the form of Fowler's solution, beginning with three drops in twenty-four hours, and gradually increasing the dose to twenty drops per diem.—*Philadelphia Medical Times*.

ARTIFICIAL RESPIRATION IN THE ASPHYXIA OF NEWLY-BORN INFANTS.

DR. MATTISON, in the *New York Med. Record*, June 12, strongly commends the following as an easily-effected and valuable method in establishing respiration and maintaining existence in these cases. The method is stated to be superior to Schultze's plan,* and is a modification of one originally described by Prof. Harvey L. Byrd, of Baltimore:—"The infant upon its back, firmly grasp the outer thigh, the index finger and thumb encircling, and the inner limb resting on the forearm, while the little finger is extended as far as possible up the back to form a fulcrum with the corresponding finger of the opposite hand. In the hollow formed by the thumb and forefinger of the right hand allow the neck of

* *Irish Hospital Gazette*. Vol. I., p. 269.

the infant to rest, with the palm under the shoulders and the little finger extending down the back to meet its fellow of the other hand. Now gently and regularly depress the vertex and inferior extremities as much as practicable below the horizontal, say forty-five degrees, thus facilitating inspiration, and, after a proper interval, elevate them to the same extent, forming a concavity of the chest, and thereby forming expiration. Continue these movements without interruption, taking care to permit no impediment to the exit and entrance of air during the upward and downward movements of the head and chest, and also exercising caution against too much lateral motion of the head during their continuance. The conjoined use of Desormeaux' douche, or a little cold water dashed occasionally on the epigastrium, will tend to enhance the efficacy of this method; indeed, its employment not at all precludes the use of whatever auxiliary measures may be deemed advisable."

SECRETION OF MILK IN A WOMAN AGED SEVENTY-TWO.

C. GRILL reports (*Upsala Läkareforen Förh.*, Vol. IX., page 538) the case of a withered and thin widow, mother of five children, the youngest twenty-five years of age, all of whom she had nursed herself, with an abundant flow of milk. When she was seventy-two years of age an eruption (probably herpes zoster) appeared on her right breast. On its drying up pain occurred in the right breast, and a secretion of milk so very abundant as to run of its own accord. Both chemical and microscopical examination showed that it was ordinary woman's milk, very rich in fat.—*Nord. Med. Arkiv.*, Vol. VII., 1875.

J. W. M.

ACTION OF CALOMEL ON THE CONJUNCTIVA.

KAMMERER (*Virchow's Archiv.*, lix. 467) had calomel dusted upon the conjunctiva of his own eye for a long time, and took the opportunity to decide the disputed question, whether calomel used in this way acted only as a mechanical stimulant, or also by absorption (as bichloride). He collected his urine twice for the period of a week in a large flask, added hydrochloric acid in excess, and then allowed a piece of gold-leaf, wrapped in tin-foil, to hang by a platinum wire in the fluid for fourteen days. In neither of these two experiments could he discover a discoloration of the gold-leaf from amalgamation after drying, but on bringing it to a red heat in a narrow glass tube, closed at one end, a small amount of sublimate was obtained, in which minute globules of mercury could be seen with a magnifying glass. The sublimate was then carefully heated with iodine, and the product had the characteristic yellow colour of iodide of silver. Two similar experiments with the urine of two patients on whose conjunctivæ calomel was dusted gave a like positive result; in one case the gold-leaf was also discoloured. It must, therefore,

be assumed that the calomel in contact with the fluids in the conjunctival sac is partly transformed into bichloride of mercury, as such is absorbed by the mucous membrane, and acts chemically on the fluids and tissues of the eye.—*Boston Medical and Surgical Journal*, May 6, 1875.

TREATMENT OF AMBLYOPIA BY SANTONINE.

SCHOEN (*Die Lehre vom Gesichtsfelde*, 1874), believing that the action of santonine is to increase the excitability of all those fibres of the retina sensitive to colour, regards its employment as indicated in diseases which diminish the excitability of the retina, atrophy, and particularly amblyopia due to alcohol and tobacco or anæmia. He has used it in a number of cases, and with better effect than he has seen from strychnia or other treatment. Two cases he relates briefly. Both patients were smokers, both improved rapidly under treatment. The dose was 0·3 gramme daily.

Schenkl (*Vierteljahrschrift für die practische Heilkunde*, i. 1875), on the other hand, in a notice of Schoen's monograph, states that santonine was employed in Hasner's clinic in twenty cases of disease of the opticus amenable to treatment, without any success in a single case.—*Boston Medical and Surgical Journal*, May 6, 1875.

ADMINISTRATION OF IRON.

THE tendency of iron to constipate may be very much lessened, or entirely prevented, by the addition of three or four drops of tincture of belladonna to each dose.—*New York Medical Record*.

A NEW METHOD OF PRESERVING ANATOMICAL PREPARATIONS.

E. SESEMAN proposes the following method (*Proceedings of the Finnish Medical Society*, Vol. XV., page 209):—The blood having been drawn as completely as possible from the larger vessels, the specimen is injected with a solution of 100 parts of water, 50 parts of glycerine, and 10 parts of arseniate of soda. Allowed to lie for 24 hours, it is again injected—this time the water and glycerine are in equal parts. After the lapse of another 24 hours, the preparation is dipped into water of the temperature of 194° Fahr., and is left in it for from 2 to 4 minutes. The vessels are then injected with wax as long as the preparation remains warm. It is then taken out of the water and the epidermis is carefully removed, either by rubbing or scraping. The specimen is next wrapped in a cloth moistened with a weak solution of carbolic acid in glycerine, and it may be left thus for a long time without losing its normal consistence. Consequently, it can be further prepared when time and opportunity permit. To prepare the part speedily, the skin is tightly secured over the selected spot, and the preparation is placed in a solution of 100 parts of raw glycerine, 20 parts of water, 4 parts of

arseniate of soda, and 2 parts of carbolic acid. In this fluid it should be allowed to remain for from 5 to 30 days, according to its size. When a preparation treated in this way is suspended for some time in the air, the skin assumes a dark colour, an inconvenience which may be remedied by wrapping the skin for some hours in a covering moistened with a concentrated solution of corrosive sublimate in water.—*Nordiskt Med. Arkiv.*, B. VII., N. 4, 1875.

J. W. M.

TREATMENT OF LEAD COLIC BY CHLOROFORM.

CHLOROFORM has been recently used with much advantage, either by inhalation or internally, in the treatment of lead colic. Dr. Barduzzi (*Il Raccog. Med.*) has successfully employed it in one case in which many other remedies had failed. The following is his formula:—Chloroform, one drachm; syrup of gum, two ounces and three drachms; water, three ounces and one drachm. This mixture is administered in two doses, at intervals of a quarter of an hour. Chloroform being eliminated very rapidly, it is expedient to administer it in large and repeated doses in order to obtain a result. The mixture was given three times in thirty-six hours, with great relief to the patient. In addition, some embrocations with chloroform were made upon the abdomen.—*Le Progrès Méd.*

LESIONS IN SPEECH-DEFECTS IN GENERAL PARALYSIS OF THE INSANE.

M. VOISIN (*Brit. Med. Journal*, June 19, 1875) sums up these as follows:—1. Stuttering is the embarrassment of speech, produced by a slowness in the presentation and emission of letters, syllables, and words, this delay being occasioned by a disturbance of memory. The alterations that have been found inducing this defect are—hyperæmia, infiltration with blastema, exudation, and recent embryoplastic productions, and softening of the cortical layer of the anterior lobes of the brain; the convolutions of the island of Reil are softened on their surface, and their substance infiltrated with serous fluid; the vessels are surrounded and filled with embryoplastic nuclei, and the nervous substance itself also contains numbers of these nuclei. This speech-defect may also be consequent on similar lesions, situated in the course of the nervous fibres, which pass from the cortical substance of the anterior convolutions to the medulla oblongata, through the white cerebral substance, the corpora striata, and pons Varolii. Foci of softening have also been found between the anterior ascending fibres of the pons Varolii. 2. Stammering, jabbering, &c., are consequent on an absence of harmony in the co-ordinate acts, performed by the muscles animated by the nerves proceeding from the medulla oblongata—viz., the hypoglossal, facial, spinal, and glosso-pharyngeal nerves, and have their origin in the

medulla and roots of these nerves; quantities of embryoplastic nuclei and fusiform bodies have been found scattered amongst the nerve-fibres and nerve-cells at the roots of origin of the nerves; and, as in the brain proper the vessels are much thickened with fibrillary tissue, and studded with these new formations, the nerve-cells themselves are seen to be transformed into fat, in various stages, and to be undergoing necrotic changes; these changes are more often found in the origin of the facial than the hypoglossal nerves. Structural lesions of the proper tissue of the olivary bodies, which might have been expected from the important part which the organ, according to Schröder van der Kolk, takes in the mechanism of speech, were never found; neither as yet have any changes been observed in the fibres of the nerves arising from the medulla.

3. *Muteness*.—Together with the brain lesions above mentioned, and atrophic lesions of the nerves at their apparent origins, fatty alterations of the muscular fibres of the tongue, and multiplication of the nuclei of the sarcolemma, have been seen. From these various observations it is concluded that the different varieties of speech-defects in patients suffering from general paralysis of the insane originate in morbid changes in the brain and medulla oblongata, involving disturbance of the intellect, the will, and the memory of words, and are accompanied in advanced cases with atrophic lesions of the origins of the nerves and fatty degeneration of the muscles of the tongue and pharynx, leading to paralysis of these organs.

R. A.

CHRONIC AORTITIS.

IN a recent communication to the Académie des Sciences on this subject, the author, M. P. Jousset, summed up as follows:—1. Chronic aortitis is an affection anatomically characterised by chronic inflammation of the coats of the aorta. The principal lesions are those of atheroma—i. e., milky and cretaceous patches, thickening and loss of elasticity of the walls, and, finally, dilatation of the artery. The inflammatory nature of these lesions has been demonstrated by microscopic examination. The inflammation of the lining membrane of the vessel may be propagated to the endocardium, and *vice versa*. This lesion then constitutes a cardio-aortitis. As accompanying lesions, premature ossification of the peripheral arteries and sclerosis of the kidneys are usually met with.

2. Chronic aortitis presents two forms—one painful, known under the name of angina pectoris; and the other, that which forms the subject of this communication, not at all or only very slightly painful.

3. Chronic aortitis is a common affection; it is usually not recognised, and confounded with some cardiac affection, or even with interstitial nephritis.

4. Chronic aortitis sometimes succeeds acute aortitis. It has, in such a case, all the same causes as the latter disease. Alcohol, tobacco, coffee, and tea, are the etiological circumstances which favour

the development of chronic aortitis. All the patients amongst whom M. Jousset observed it were gouty, or had piles, and were over thirty-five years of age. 5. The principal symptoms are, an habitual dyspnoea, and, from time to time, serious attacks of suffocation. These serious attacks have the characters of cardiac dyspnoea. The pulse is accelerated, while, at the same time, it becomes small, and finally disappears. The patient is in an extremely desponding state (*état lypothimique*); there are cold sweats, and sometimes complete syncope. During the attacks expiration is convulsive and prolonged. Insomnia, loss of strength, and anæmia, are other symptoms of aortitis; and these run on to cachexia, characterised by œdema, albuminous urine, and sub-delirium. Death takes place by asphyxia, syncope, or uræmic complications. 6. The physical signs are—various modifications in the aortic bruits, the constant formation of a plateau in the sphygmographic tracings, and, at an advanced period, an increase of the aortic dulness.—*Gaz. Méd. de Paris*, 26 *Juin*.

URINARY ANALYSIS.

DR. STABELL recently exhibited at the Norwegian Medical Society a specimen of urine which might readily be supposed to contain albumen. Thus, in the acid (?) urine a precipitate was formed, both on the addition of nitric acid, and on boiling. The precipitate formed on boiling was re-dissolved by both nitric and acetic acids, while that produced by nitric acid did not disappear on boiling. The latter clearly consisted of uric acid, whereas that caused by boiling was composed of phosphates.—*Nord. Med. Arkiv.*, Vol. VI. 1875.

J. W. M.

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MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*Cases of Femoral and Popliteal Aneurisms.* By SURGEON-MAJOR J. H. PORTER, Assistant Professor of Military Surgery, Army Medical School, Netley.

CASE I.—*Double Popliteal Aneurism associated with Femoral Aneurism of the Right Side ; Ligature of the Right External Iliac Artery ; Left Popliteal Aneurism Cured by Compression.*

G. F. H., aged twenty-eight years, of healthy appearance, has suffered twice from primary venereal sores, once accompanied by a bubo in the left groin, which suppurated. Has never had rheumatism or secondary syphilis. At one time he smoked tobacco very freely. Family history not satisfactory, both parents being very delicate.

He gives the following history of himself:—Early in November, 1874, for the first time, noticed a swelling behind the left knee, accompanied by pains during the night, which disappeared towards morning. About the end of November noticed a similar swelling behind the right knee, but cannot fix upon any particular dates. On one occasion he felt considerable pain in these swellings when kneeling on a high stool in church, which position pressed the thighs down upon the calves of the legs. Did not pay any particular attention to his condition until the 5th February, 1875, having taken his usual amount of walking exercise (which was considerable) up to that date without inconvenience, when both swellings became very painful, and being on board a steamer coming

from Canada he consulted the surgeon of the vessel, who at once pronounced them to be popliteal aneurisms. While on board the steamer flexion of both limbs was carried out with a hope of consolidating the tumours, but he was unable to bear it for any length of time.

On the 20th February, having rejoined his regiment at Aldershot, pressure was commenced on both femorals, by means of weights and artery compressors, which treatment was kept up till the 24th, when he came under my observation at Netley Hospital suffering from two large popliteal aneurisms, one in each leg.

Pressure was now established on both femoral arteries by means of Carte's and Signoroni's instruments, and continued till the 4th of March with but slight intermission; by this time the tumour in the left leg was somewhat consolidated. Read's compressor, third series, was now applied over the left femoral, alternating with Carte's lower down the thigh, and on the 6th of March pulsation had quite ceased in the tumour.

At this date there was no difference in the condition of the right popliteal aneurism, though compression had been kept up very steadily on the femoral vessel since admission into Netley Hospital on the 24th of February. On the 13th of March it was observed that there was dilatation of the right femoral artery for about two inches below Poupart's ligament, which complicated matters very seriously, there being as yet no attempt at consolidation in the popliteal aneurism. Digital pressure was therefore established against the brim of the pelvis, immediately above Poupart's ligament, and pressure by Signoroni's and Carte's instruments on the thigh; this was kept up without any benefit till the 2nd of April, when flexion of the thigh on the body and the subcutaneous injection of Langenbeck's solution of ergotine in immediate neighbourhood of popliteal aneurism were commenced. By flexing the thigh on the body as far as possible pulsation was completely stopped both in the femoral dilatation and in the popliteal aneurism. This treatment was carried out till the 26th of April without any benefit, when 20-grain doses of iodide of potassium were administered three times a day; but no benefit having been derived from this course, it was decided, in consultation with Professor Longmore and Sir James Paget, to ligature the right external iliac artery, which operation (with the valuable assistance of the above gentlemen) I performed on the 10th of May.

The operation consisted in making an incision through the

abdominal walls of five inches in length, extending from one inch above anterior superior spinous process of ilium to one inch above the centre of Poupart's ligament. The usual precautions were carefully observed; the vessel, reached with but little difficulty, was found healthy, and tied by a strong silk ligature, both ends of which were left out of the wound.

The wound was closed at the upper end with silver wire sutures, the lower end being left open, and the whole dressed with lint saturated with carbolic oil.

The limb was wrapped in cotton wool, everted, semi-flexed, and placed on a soft pillow. Recovery gradually ensued without any unpleasant symptoms, with the exception of obstinate constipation and flatulency.

The ligature came away on the thirty-fifth day, and the patient was out driving on the sixtieth day. He left Netley for Canada on the 10th of August, or three months after the operation.

Professor Parkes, F.R.S., was good enough to examine this patient's circulatory system a few days before the operation. The following is an extract from his report:—

“Heart in natural position; impulse extremely feeble. At apex first sound very short and feeble, second sound well heard. No murmur. Midway between sternum and nipple a very slight but quite undoubted diastolic murmur, not carried to apex, though it can be heard a little down the sternum. At the third left and second right cartilage it is hardly heard and often undetectable.

“Both radials rather tortuous; slightly locomotive.

“Brachials not apparently changed.

“Nothing decided about abdominal aorta; a good deal of pulsation.

“Right femoral dilated. Popliteal aneurism.”

This case may be considered of some interest in giving encouragement to surgeons in ligaturing large arteries, notwithstanding undoubted co-existent disease of the general arterial system.

CASE II.—*Right Popliteal Aneurism.*

Private T. C., 67th Regiment, age thirty-three years, and sixteen years service, was admitted to the Royal Victoria Hospital, Netley, on the 30th April, 1875, for aneurism of the right popliteal artery.

The following is a brief history of the case:—

While serving in Burmah, in November last, he first became troubled with sharp lancinating intermittent pains, shooting from

the inside of the right thigh down to the foot, and which gradually increased in intensity.

On or about the 1st or 2nd of December, he became conscious of a swelling in the popliteal space, which he could not account for in any way, as he felt nothing rupture suddenly in that region, nor had he previously passed through any violent exertion. The swelling or tumour soon increased in size, and the pains in the limb became more severe. On the 4th of December, according to his statement, he reported himself to his surgeon, and was received into hospital, where he remained until the 16th, during which period the treatment adopted was unsuccessful, and he was then invalided to England.

On his way home he was admitted into the hospital of the 45th Regiment, at Rangoon, and remained there from the 20th December to the 19th of January, during which period digital compression of the femoral artery was tried, besides flexion of the limb, producing, he states, a very sensible diminution in the size of the tumour, which became reduced from the size of a hen's egg to that of a walnut. On his way home from Bombay the "*flexion*" method was again adopted for nine days without any good result.

The patient, on admission to Netley, was in very good general health, had a good family history, with the exception that he stated that a brother of his was seized with illness suddenly while at dinner, became insensible, fell off his chair, and expired in the space of two hours. There was no history of syphilis or rheumatism. The day after his admission the circumference of the joint over the tumour exceeded that of the sound side by half an inch, and the tumour itself on being felt appeared to be about the size of a hen's egg.

On the 2nd of May the patient was placed in position in bed; the groin shaved and sprinkled with French chalk, the limb slightly flexed and everted, and Read's tourniquet, third series, applied, so as to compress the femoral artery against the brim of the pelvis, and when the skin became painful, alternated by Carte's tourniquet placed over the artery in the middle of the thigh. The pressure was so adjusted that a very slight pulsation was permitted in the tumour, and kept up from 10 a.m. until 7 p.m., under the superintendence of various medical candidates, and then left off for the night. He was also placed on half diet without stimulants or other extras.

On the 3rd of May, at 7 a.m., the tourniquets were again applied, substituting Signoroni's for Carte's, but on account of the pain

produced by the former, the latter had to be re-applied, and pressure was kept up to 7 p.m. After the removal of the tourniquets he experienced a pricking sensation on the inside of the joint, but did not suffer any other inconvenience. The instruments were re-applied the next day (4th May) under the same conditions, and at 6.45 p.m., while changing the tourniquets, pulsation was strong and distinct in the tumour; but on removing them at 7 p.m. *pulsation had quite ceased*. While the tourniquets were applied considerable pain was produced by pressure; and the pricking sensation previously complained of in the inside of the knee-joint continued after their removal. The next morning at 7 the swelling was found to be much smaller, quite hard and devoid of pulsation, and on measuring the limb it was found that the circumference had increased half an inch, probably from the pressure used. The temperature in the limb diminished somewhat, and it was in consequence wrapped in cotton wool and kept in position.

On the 5th of May the instruments were re-applied for occasional pressure for four hours, and then removed, but pain was still complained of over the knee-joint, and down the course of the posterior tibial artery as far as the foot.

8th May.—He was able to get up and sit by the fire, but was not allowed to walk about for three weeks afterwards.

The comparatively rapid cure in this case was, no doubt, assisted by the patient's strict attention in carrying out the instructions for his treatment, though, of course, it was mainly due to the well-regulated pressure kept up by the instruments employed in the case. The pressure was continued over three days, and altogether for thirty-three hours, as shown by the following analysis. The pressure on the 5th of May was only supplementary, and exerted no influence on the case:—

Date	Pressure Applied	Pressure Removed	Instruments used	Hours per Day
1875	A.M.	P.M.		
May 2	10 0	7 0	Read's and Carte's alternately - -	9
„ 3	7 0	7 0	Read's, Carte's, and Signoroni's - -	12
„ 4	7 0	7 0	Do., do., do. - -	12
Total,				33

CASE III.—*Left Popliteal Aneurism.*

A. M., 32nd Regiment, aged thirty-two, service ten years, a tall, well-developed man, of temperate habits, has had primary syphilis, but no secondary symptoms. There is no history of rheumatism.

The present disease is traceable to an injury he received at King-williamstown in January, 1875. While walking along a bad road at night he tripped in a rut, and was sensible that something had given way at the back of the thigh, but as he found nothing wrong nor suffered pain, he thought lightly of the matter.

Early in the following March he began to feel pains in the left knee and calf of leg, which obliged him to seek relief, and when in the act of rubbing in some liniment for these pains, he became cognisant of the fact that there was a pulsating tumour behind the knee-joint. He reported the circumstance, and was admitted to hospital, where he states he was kept at rest, given low diet, and ordered large doses of the iodide of potassium. Treatment by flexion was commenced, and continued (during the day-time) for eight days; but as this did not succeed, digital compression was resorted to, and kept up for twenty days, with no better result than an apparently slight diminution in the size of the tumour, which is stated to have been about as large as a hen's egg.

He was then invalided to England, and arrived at Netley on the 22nd June, 1875. The following was his condition on admission:—Patient extremely nervous and excitable, heart's action rapid, and every artery in the body pulsating strongly.

In the left popliteal space a pulsating tumour, about the size of a hen's egg, was found. Upon placing the hand over it, a strong, heaving, and expansile pulsation was communicated to it, and upon auscultation a bruit was heard. Firm pressure on the femoral artery completely arrested the pulsation.

The patient was ordered to observe perfect rest for a few days, given low diet, and grs. xv. of iodide of potassium three times daily.

On the morning of the 26th of June treatment by compression was commenced.

The groin being shaved and well dusted over with French chalk, Read's compressor, third series, was applied over the femoral artery, below Poupart's ligament, and at the lower part of Scarpa's triangle Carte's tourniquet was adjusted. These instruments were used alternately, and the patient instructed how to change them whenever one or other of them began to cause pain from pressure,

and in such a manner as not to completely arrest the flow of blood in the vessel—the object being to cause coagulation in the sac. The instruments were removed at 7 p.m., having been on for seven hours and three quarters. A dose of Battley's sedative was given at bed-time, and the man was allowed a good night's rest.

On the 27th, pressure was continued in the same manner from 7 a.m. until 7 p.m., the patient being easy and cheerful the whole time.

June 28th.—The tumour feels harder and the pulsations less forcible; slight pains in the knee and tumour during the night. Pressure re-applied and continued as before. Towards evening the limb became slightly cedematous; but this disappeared when the pressure was removed.

29th.—Shooting pains in the tumour and knee complained of. Pressure put on at 7 a.m. At 10 a.m. the groin was so painful that Read's instrument was removed, and Signoroni's applied lower down on the thigh; but not being found to answer, it was taken off in about an hour, and the former instrument re-arranged with a soft pad under it. A vessel can be seen and felt over the inner condyle. Instruments taken off at 6.30 p.m., when the sac was found to be very hard, and the pulsation in it almost gone. A good deal of pain, of a burning character, was experienced until midnight, when it was found that all pulsation had ceased in the tumour. The pain gradually wore off, and he slept well until morning.

30th.—All pulsation stopped; collateral circulation established; limb rather cold and numb. To be wrapped in cotton wool and flannel. Pressure moderately applied during the day.

Date	Pressure Applied	Pressure Removed	Instruments used	Hours per Day
	A.M.	P.M.		H. M.
June 26	11 15	7 0	Read's and Carte's alternately every quarter of an hour	7 45
" 27	7 0	7 0	Do. - - - - -	12 0
" 28	7 0	7 0	Do., and Signoroni's for an hour only	12 0
" 29	7 0	6 30	Read's and Carte's - - - - -	11 30
Total hours,				48 15

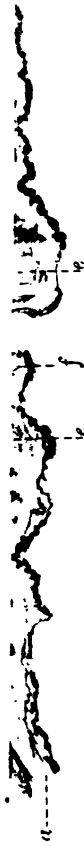
31st.—Treatment discontinued. Patient to remain in bed for some days.

ART. VI.—*Microscopical Appearances in a Case of Congenital Alopecia.* By H. MACNAUGHTON JONES, M.D., F.R.C.S., Ire. and Edin.; and RINGROSE ATKINS, M.D., M.Ch., &c.

THE boy from whom the accompanying drawings were taken, was a patient in the Cork Ophthalmic and Aural Hospital. He was under treatment for an affection of his eyes. He never remembered having any hair on the scalp, but has some idea of having heard when young that he had some downy hairs. The only part of his body on which there is any appearance of hair now is on the face, where there are some weak downy hairs here and there. The skin of the scalp is quite polished and smooth. Circumstances, unfortunately, completely prevented my obtaining a clear history of the case, or seeing his parents. The boy had aborted finger-nails, badly formed, with ridges and furrows. His teeth were irregular, far apart, marked with transverse ridges, and discoloured. The skin on the scalp appeared to be equally sensitive in all parts. As observations on the histological characters of the skin, in cases of congenital alopecia, are few and scattered through foreign medical literature, I was anxious to ascertain the appearances in this case, and accordingly, in conjunction with Dr. Ringrose Atkins, removed, with a pair of scissors, a small piece from the scalp. The accompanying drawings, which he has taken from preparations put up by him, and which I have sent to Dr. Tilbury Fox* for his opinion, accurately represent the structure of the skin there existing. The following is Dr. Atkins' description:—

“I have carefully examined, by means of numerous sections, treated by different methods, the portion of skin removed from the boy's scalp, and I find its anatomical construction to be as follows:—The (what ought to be) cuticular surface is formed of a fine fibro-areolar tissue, with numerous large loculi of adipose cells scattered in its meshes; beneath this the fibroid element becomes denser, is rapidly and highly colourable with carmine, the individual fibres being broad and wavy, and of a homogeneous waxy appearance; deeper down the fibres again become narrower, and appear in parts as if broken across. In this are seen several irregular loculi, crossed by fine trabeculæ, and containing a granular material; and also in several parts of all the sections examined

* I had a letter from Dr. Fox regretting his absence on his holidays; hence I am not able to record his view of the appearances presented.

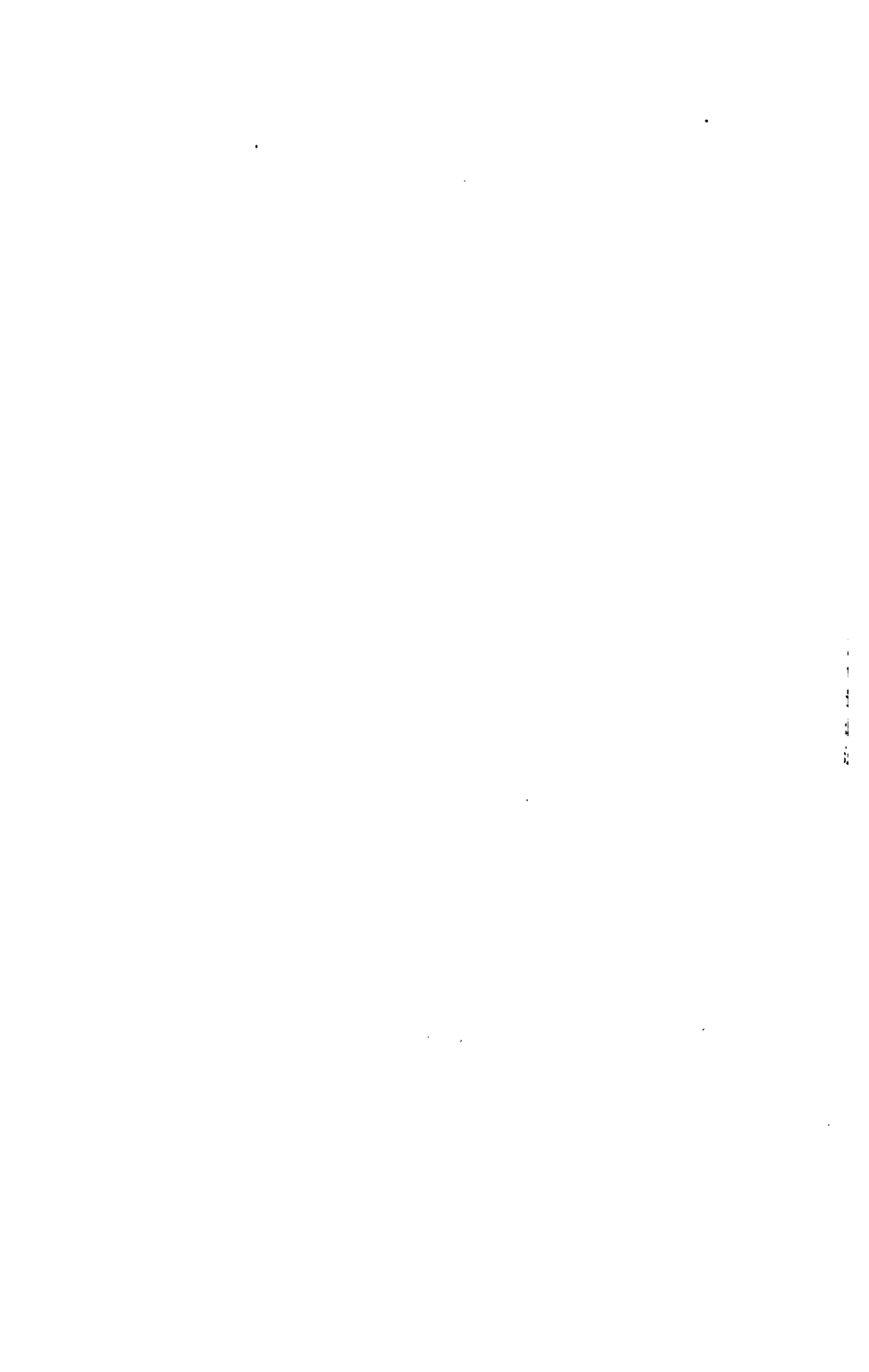


THE SUBJECT OF GENERAL AND COMPLETE CONGENITAL "ALOPECIA."

EXPLANATION OF DRAWINGS.

- A. $\times 60$.—Vertical section of skin showing epidermis "inverted":—
 a.—"Epidermis" atrophied and horny, and lying on the tissue beneath (which is not seen).
 b.—"Abnormal Corium;" "papillae" almost entirely gone, and surface consequently flattened.
 c.—Fibroid tissue existing on surface in close bundles, and feebly colorable by carmine.
 d.—Loculi of adipose cells, the individual cells atrophied and irregular.
 e.—Atrophied "hair follicles" represented merely by shallow pits in the altered corium, lined with withered epidermic cells.
 f.—Loculi filled with a granular material, probably the remains of aborted "glands."

- B. $\times 300$.—Small portion of vertical section of skin, similar to A:—
 a.—"Epidermic layer cells" withered and compressed.
 a' a' a'.—"Apertures" in the tissue, lined with epidermic cells, forming transverse sections of tubular cylinders running through it.
 b b.—Tissue of the abnormal corium which has become altered and fibrous, all appearance of papillae or cells having disappeared. The tissue is infiltrated with an apparently "albuminoid" material easily and highly colorable with carmine, the fibrous bundles are broad and waxy looking, in parts more or less separated, and becoming more dense and closer as the epidermis is approached.



an aggregation of circular and ovoid apertures, deeply lined with small and compressed epidermic cells. These apertures occurring in exactly similar situations in the several portions examined, as they were cut one after another, evidently are transverse sections of tubular cylinders running horizontally through the tissue, which may, perhaps, represent hair follicles altered both as regards their situation, position, and structure. Below the fibroid tissue already mentioned, and applied on it, is a layer of epidermis, very much atrophied, the individual cells being closely compressed and withered. In parts of some of the sections there is an indistinct appearance of 'papillæ,' but this epidermic layer is for the most part applied quite flat on the tissue *above* it, and nowhere is there any appearance of true corium. In all the sections examined, one or two true aborted hair follicles are seen, forming shallow pits in the epidermic layer, and lined by a layer of similar cells, the open extremities looking *downwards*. The epidermic layer is only present in the centre of the portion examined, where the cut had reached deep enough to meet it; and it was at the junction of this layer with the tissue on which it lay that the piece was removed. The accompanying drawings which I have made from two sections, taken from the centre of the piece, will illustrate the peculiar 'inverted' condition of the epidermis and abnormal formation of the skin better than any written description."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Lectures on Diseases of the Respiratory Organs, Heart, and Kidneys. By ALFRED L. LOOMIS, M.D., Professor of Pathology and Practical Medicine in the Medical Department of the University of the City of New York, &c. New York: William Wood and Co. 1875. 8vo., pp. 549.

AMONG the many excellent text-books on practical medicine which the industry and talent of our Transatlantic brethren have given to the world, this series of Lectures by Dr. Loomis will take a foremost place. They were delivered in the Medical Department of the University of the City of New York to the class of 1874; but they are of cosmopolitan value, and will, doubtless, become widely known and appreciated in the medical schools of Europe.

The volume which contains these Lectures is divided into three parts—the first is devoted to Diseases of the Respiratory Organs; the second, to Diseases of the Heart; and the third, to Diseases of the Kidneys. In the first three lectures the author treats of Diseases of the Larynx, which he considers under the following heads:—

“*First.*—Catarrhal laryngitis, which may be acute or chronic.

“*Second.*—Edema glottidis, or inflammation of the submucous tissue of the larynx.

“*Third.*—Membranous croup, or croupous laryngitis, which is always acute.

“*Fourth.*—Ulcerations, which may be catarrhal, typhous, variolous, tubercular, or syphilitic.

“*Fifth.*—Nervous affections, as spasms, paralysis, &c.

“*Sixth.*—Pathological new formations, as polypi, cancer, tubercle, ossification and calcification of the laryngeal cartilages.”

Lectures IV. and V. deal with bronchitis under its three forms—acute catarrhal, chronic catarrhal, and croupous or plastic. Spasmodic asthma, hay-asthma, and whooping-cough, make up the

somewhat incongruous subject-matter of Lecture VI. Dr. Loomis speaks highly of the efficacy of hypodermic injection of morphia as a sedative in the paroxysm of asthma. We can corroborate his testimony, and at this moment a case of cardiac asthma is called to our mind in which morphia administered in this way certainly saved life, although the right heart and venous system were intensely congested. Of course the indiscriminate use of such a remedy, under the circumstances just described, is to be deprecated.

Having next spoken of emphysema, œdema, congestion, apoplexy, gangrene, and cancer of the lungs, our author considers pneumonia, pleuritis, and phthisis. In the very interesting lectures on these affections, he follows in the main the teaching of the modern German school. He observes:—

“Clinically, as well as pathologically, there are three distinct types of pneumonia, each of which requires a separate consideration.

“*First.*—CROUPOUS or LOBAR PNEUMONIA, which is always acute.

“*Second.*—CATARRHAL or LOBULAR PNEUMONIA, sometimes designated BRONCHO-PNEUMONIA, which may be acute or chronic.

“*Third.*—INTERSTITIAL PNEUMONIA, or fibrous induration of the lung.”

He describes pleurisy under four heads—acute, sub-acute, chronic (or empyema), and hydropneumothorax; while he divides phthisis, according to its most marked anatomical lesions, into the catarrhal, fibrous, and tubercular forms.

Part II. deals with affections of the heart and its surroundings, grouped under the following headings:—Pericarditis, endocarditis, valvular lesions, cardiac hypertrophy, cardiac dilatation, myocarditis, fatty and waxy degenerations of the walls of the heart, atrophy of the walls of the heart, thrombosis and aneurisms of the heart, new formations, and neuroses.

We find a similar systematic, but, nevertheless, practical arrangement in Part III., in which Dr. Loomis considers Diseases of the Kidneys. He treats of renal congestion, renal hæmorrhage (including infarctions), Bright's diseases, pyelitis, hydronephrosis, cystic kidneys, precipitates and concretions (renal calculi), new growths (cancer, &c.), and parasites. Lecture XXXVII. is on “Acute Uræmia,” and the manner in which the author handles this interesting yet obscure subject appears to us especially note-

worthy. Having briefly stated the theories of the occurrence of uræmia, he concludes:—

“First.—That uræmic toxæmia depends upon a complete or partial arrest of the urinary secretion.

“Second.—A qualitative analysis of the constituents of the urine goes to show that urea is its only positive poisonous ingredient, and that it is not the special product of any particular tissue or organ, but the united product of all nitrogenised effete matter.

“Third.—Numerous experiments have shown that urea, when introduced into the blood of animals, acts as a narcotic poison, producing phenomena identical with those of uræmia.

“Fourth.—That urea is not decomposed into carbonate of ammonia and water in the blood, but that such decomposition may take place outside the blood-vessels, in the bladder, pelvis of the kidneys, and intestines, and if the products of the decomposition are retained in these cavities any length of time, they give rise to conditions of ammonæmia, which in many of its features resembles uræmia.

“While the question is still unsettled as to the exact poisonous agent in uræmia, it seems to me that the facts relative to urea warrant the assumption that urea is an irritant poison, and when in excess in the circulation, acts primarily upon the cerebro-spinal centres, and through them interferes more or less with the functions of organic life; and that œdema of the brain, and other structural changes which occur in the course of uræmia, are the result of the action of the poison.”

Speaking of the eliminative treatment of acute uræmia, Dr. Loomis bears testimony to the efficacy of digitalis as a diuretic. He says:—

“We have conflicting testimony in regard to the use of diuretics in the treatment of acute uræmia. Many object to their use on the ground that it is contrary to the principles of medicine to stimulate an inflamed part—that the first step toward the healing of an inflamed organ is rest. Even if we admit this view to be correct, we have a class of diuretics that do not act as stimulants to the kidneys. *Digitalis* ranks first in this list; although it is a very efficient diuretic, it never seems to irritate the kidneys. It increases the power of the heart's action, and perhaps the contractile power of the capillaries; it also materially increases the blood-pressure. In a healthy state, the normal secretion depends upon there being no obstruction to that pressure. In this disease the diminished flow of urine is due to obstruction to the capillary circulation of the kidneys. Digitalis, by increasing the heart-power and the force of the capillary circulation, overcomes such obstruction.

“Accepting this view of the diuretic action of digitalis, its adminis-

tration is especially indicated in acute uræmia. To obtain its effects in the condition of the kidneys which attends acute uræmia, I am convinced that much larger doses are required than are usually administered. My rule of practice in these cases is to give half an ounce of the infusion of the English leaves every three hours for twenty-four hours, or at least until I produce the specific effect of the drug, and I do not remember in a single instance to have met with the overwhelming accumulative effects of digitalis against which so many writers warn us."

With respect to the use of morphia in this condition, the author is at variance with most authorities. As the result of his experience, he holds:—

"*First.*—That morphine can be administered hypodermically to some, if not to all, patients with acute uræmia, without endangering life.

"*Second.*—That the almost uniform effect of morphine so administered is, first, to arrest muscular spasms by counteracting the effect of the uræmic poison on the nerve-centres; second, to establish profuse diaphoresis; third, to facilitate the action of cathartics and diuretics, especially the diuretic action of digitalis.

"Thus morphine administered hypodermically becomes a powerful eliminating agent.

"The rules which are to govern its administration are as yet not well defined. My own experience would teach me to give small doses at first, not to exceed ten minims. If convulsions threaten, and a small dose does not arrest the muscular spasms, it may be increased to twenty minims, and the hypodermics may be repeated as often as every two hours. It must be given in sufficient quantities to control convulsions; neither the contraction of the pupils nor the number of the respirations is a reliable guide in its administration."

The length to which this notice has run forbids an analysis of the Lectures on Bright's Diseases. Dr. Loomis follows Virchow's arrangement of these affections, as modified by Dr. Stewart, and describes *parenchymatous nephritis*, *amyloid disease*, and *cirrhosis*.

Although we seldom allude to the typography and style of a book, we cannot conclude our notice of these Lectures without a word in praise of the faultless manner in which they have been published. The beautiful paper and clear type are a fitting setting to a most valuable work.

WORKS ON DIET.

1. *A Manual of Diet in Health and Disease.* By THOMAS KING CHAMBERS, M.D., Oxon.; F.R.C.P., Lond., &c. London: Smith, Elder, and Co. 1875. 8vo., pp. 352.
2. *On Diet and Regimen in Sickness and Health, and on the Interdependence and Prevention of Diseases and the Diminution of their Fatality.* By HORACE DOBELL, M.D. Sixth edition. London: H. K. Lewis. 1875. Pp. 248.

DR. CHAMBERS is a pleasant writer, whose works are always acceptable because of their originality and soundness. His "Manual of Diet in Health and Disease" especially bears out this remark. It is eminently practical; from beginning to end the reader feels that the author writes from experience; and the style of the book, if sometimes quaint, is always agreeable.

Avoiding, as a rule, the scientific aspects of his subject, Dr. Chambers deals with dietetics from the stand-point of a practical physician. His treatise, therefore, does not clash with the elaborate work by Dr. Pavy, which we noticed some twelve months ago, and which deals so fully with the chemistry and botany of food.

Dr. Chambers divides his book into three parts. The first speaks of "General Dietetics;" the second, of the "Special Dietetics of Health;" the third, of "Dietetics in Sickness."

While heartily recommending the work to all physicians, and even to all physicians' wives, we shall take the liberty of quoting two or three passages illustrative of the "racy" style in which the book is written. In a chapter on the "Choice of Food," we find these hints as to the making of salads:—

"Vegetables intended to be used for salad should all be fresh and crisp, and sweet and clean. Their colours should be positive and even, the reds very red, the whites very white, and the greens pure as those in an autumn sunset sky, except in the full-grown leaves, such as water-cress. The salad ought to be dressed by one of the daughters of the house, after she has herself dressed for dinner, singing, if not with voice, with her clean cool fingers, sharp silver knife, and wooden spoon—

" 'Weaving spiders, come not here;
Hence, you long-legged spinners, hence:
Beetles black, approach not near;
Worm nor snail, do no offence.'

The purity of the bowl is more important than that of Titania's bower. So will the guests eat it with light hearts, free from all fears of noxious ingredients."

Again, speaking of sparkling wines—Champagne, St. Péray, Seyssel, Sparkling Moselle, and Vino d'Asti—the author remarks:

"The test of a sparkling wine is to leave it uncorked. If it be vapid after twenty-four hours, it is bad, and it is good in direct ratio to the length of time it retains its sparkle and aroma. That which roughens the teeth should never be again tasted; it is made of cider and rhubarb stalks; the roughness is from the malic acid it contains.

"All these five classes of wine prudence will reserve for festive purposes and occasions; the wise man who wishes to enjoy life will make them always exceptional, for as idlers have no holidays, so perpetual feasters miss all the pleasures of variety; but I am quite sure that the not infrequent manufacture of occasions for domestic rejoicing—a birthday, a wedding anniversary, a harvest home, a horse sold, the planting of a tree, the calving of a cow, a daughter presented at court, or cutting her first tooth, or any other good stroke of business—is a great promoter, not only of love and happiness, but of personal health. Let the beverages which celebrate the occasion be chosen for their peculiar and exceptional flavours. If they are good of their class, the moderate use will not shorten, but both cheer and lengthen life."

In a chapter on "Climate," this paragraph occurs:—

"When the Englishman is in foreign countries it is more necessary than at home to pay that attention to diet which will ensure the highest attainable health and condition. For to his constitution, at any rate, if not absolutely, every place is less healthy than England. Plagues of all sorts, terrestrial and celestial, beset his path, and he must walk warily if he would return sound. Perhaps at home he may have lived carelessly, and been lucky enough not to suffer, but he cannot hope for the same good fortune under less favourable auspices. This caution is not required by the sensible readers of these pages, but it may be useful in its application to their less wise dependents and clients, who, in countries where one is always thirsty and there is abundance of drink, are as apt to yield to temptation as in England. The punishment of stupidity is surer and heavier than they are led to anticipate by former experience."

We should not forget to call particular attention to the chapter on "Alcohol," which treats with its physical and moral effects in detail.

It is hardly necessary to notice the new edition of Dr. Dobell's well-known little book. It has gradually grown in size, and increased in the number of subjects considered as the successive editions have appeared. The book, although professing to be a "refresher" to both doctor and patient, is really a popular manual concerning diet, and incidentally treating of many other hygienic questions. We would suggest that Doctor Dobell, when writing for the public, should use the word "doctor" in its true sense, and not as a generic term for the whole profession of medicine; educated lawyers or clergymen do not apply it to the whole of the professions of law and divinity, to which it is quite as applicable as to the whole profession of medicine.

Dr. Dobell's work seems to be all it professes to be, and we believe it will be found very useful, especially to those who have charge of children, or are engaged in attendance on the sick. We recommend the book to mothers and nurses.

Nature and Treatment of Deformities of the Human Body. By LAMBERT H. ORMSBY, M.B. Pp. 263. Dublin: Fannin & Co.

THE perusal of this book has not been an unmixed pleasure. The author evidently belongs to the class of unconscious humorists, and he has written a great deal to make the reader laugh; but there is much more in his book to give pain to anyone who is at all tender about the reputation of the Dublin School of Surgery. Mr. Ormsby is Surgeon to the Meath Hospital, and the subject of our review professes to be a course of lectures delivered by him to the students attending that institution. If he had been led by the suggestions of the most ordinary wisdom, he would have allowed his efforts to rest there. But being ambitious of authorship, he has out-leaped prudence in giving this book to the world. If we were in search of any motive to which we might attribute his desire to instruct his brethren, we should find an answer in his own words: "The fact of the matter is, it appears to me, that every surgeon taking up the subject of orthopædic surgery as a speciality thinks it necessary and required of him to write some treatise, or communicate his ideas in some published form," &c. Accordingly, Mr. Ormsby accepts the inevitable, and does what we must presume to be his best to do his duty.

One of the strong features of these lectures is their literary

structure. The author is not without some ideas as to the principles of composition, and although his mode of expressing them is decidedly confused, we shall let him have the benefit of printing them here:—

“It is well to remember that conciseness of description is not incompatible with brevity; and if every lecturer and writer were to endeavour to say as little as possible that is unnecessary, and what they have to say to say it with clearness of style, fulness of meaning, and accuracy of description, and to convey their ideas in the fewest amount of words, much time, indeed, would be gained, and many a reader saved the extreme tedium of wading through so much unnecessary matter to get at the sum and substance of any given subject.”

The standard, as we apprehend it, is good; but let us have some specimens of Mr. Ormsby's “clearness of style:”—

“There is no pain connected with them (loose bodies in the knee-joint) when at rest, but, when walking they get between the articular end and surfaces of the bones, and the person feels great pain, together with a sickening feel, who has to suddenly stop, and perhaps falls” (p. 128).

“If to the original malformations of the germ we ascribe the causes of all deformities and monstrosities, I think we *cannot* hardly be considered correct” (p. 19).

“If the child creeps about on all fours, you will *constantly* see the radius and ulna *very frequently* primarily affected” (p. 88).

“The vagina may be altogether absent, and on separating the *passages*, *no trace of the passage* is to be seen” (p. 242).

We quote the opening sentence of a paragraph:—

“No doubt made use of for the *sake* of a better reason, and in a remarkably able article on ‘Generation’ in ‘Todd's Cyclopædia of Anatomy and Physiology,’ all the supposed mental impressions which have been considered as the cause of malformations took place, with few exceptions, in the last stage of pregnancy, when, of course, the child was fully developed” (p. 21).

We might cite many similar specimens of utterly unintelligible “Queen's English,” to show that, in Mr. Ormsby's language, they occur “frequently often” throughout the book. There are other peculiarities, however, which are not less interesting. The author has great faith in the force of a long sentence, and we can imagine the applause which greeted him on the close of a rhapsody of no less than twenty-four lines of print. Nineteen-line sentences are

quite common. Even this eccentricity might be excused; but we cannot pass over the repeated violations of the fundamental rules of grammar which are so lavishly distributed throughout these two hundred and sixty-three pages. Nominatives and verbs are in irreconcilable opposition, and have been allowed to get into hopeless disorder.

We have said so much upon the literary part of Mr. Ormsby's book, because we believe that lectures for the instruction of students ought to be written in fairly accurate language. Turning, however, to the consideration of its merits as a scientific work, we shall not have to say very much. With really good treatises upon the subject in our libraries, there was certainly no need for this. The author has attempted to give a history of the deformities of the body and their treatment, but we cannot compliment him upon a distinguished success. Should the student be anxious to get an enumeration of deformities, he will find it here; but he will be disappointed should he expect anything like completeness. We turn to "Hare-lip," and we have it disposed of in a page and a half, the reader being referred to "the various books of surgery" for information. We have, indeed, a description of the treatment of a simple case, but there is not a hint as to trying to avoid the "notch," or as to which pin should be introduced first, or as to the red border of the lip. It fails in essential points.

Under the heading "Deformities of the Feet," there are reports of six cases of talipes varus, but they do not reveal a fact of importance, except it be that the author treated them. The descriptions of the divisions of tendons might be easily improved; but they will be found in any ordinary surgical text-book. The woodcuts are, with a few exceptions, very muddy. Those representing apparatus are, we believe, without exception, after Charrière.

It may appear that we have written too severely of this work, but we have done so most conscientiously. The misfortune of our day is that there is a plethora of writers in our profession, and that some men think that in order to attain success it is only necessary "to write a book."

RECENT WORKS ON PSYCHOLOGICAL MEDICINE.

1. *West Riding Lunatic Asylum Reports*. Vol. IV. 1874.
2. *The Journal of Mental Science*. April, 1875.

THE present volume of the West Riding Asylum Reports contains, as usual, several interesting and carefully-prepared articles. Dr. Ferrier has a paper on "Pathological Illustrations of Brain Function," the object of which is to show some of the clinical bearings of the experimental researches on the functions of the brain, which he published in the last volume of these Reports. Several cases are given in detail, with a commentary, elucidating the various points of special interest in each, and the reporter incidentally replies to the strictures of Dupuy, Carville, &c., upon his previous articles. Dr. Carpenter also has an article upon "The Physiological Import of Dr. Ferrier's Experimental Investigations into the Functions of the Brain," in which he sums up the conclusions which these investigations appear to warrant.

Dr. Ferrier contends that the objections urged against his theory of the localisation of motor centres in the hemispheres are refuted by the facts that the results of stimulation of any given point in the hemispheres are "uniform and predictable," while there are some points, stimulation of which gives rise to "no external phenomena whatever." If the motor phenomena simply depended upon vague conduction of the stimulus to the deeper centres, such precision of prediction would be impossible; and Dr. Ferrier holds by his theory, that each particular part of the cerebral cortex "is in direct communication with the motor tracts and their ganglia, and that its function is to excite co-ordinated muscular action of a definite kind, of the nature which we call voluntary." It would thus appear that the main difference between him and his French critics is, that, whereas they appear to consider the cerebral hemispheres as a *terra incognita* connected with the "motor centres" in some altogether vague manner, he regards them as centres of co-ordination, connected with the inferior motor centres, as definitely as the keys of a piano are with the strings; each centre no doubt being capable of still higher co-ordination with its fellow-centres, just as the keys of the piano are capable of co-ordination into chords by the fingers of the player. The theory is a plausible one enough, and both the experiments and pathological cases, so clearly

detailed by Dr. Ferrier, undoubtedly point to some such conclusion. He distinctly rejects the hypothesis that the motor nerves of the muscles are "carried continuously up to the cortex, and there combined and co-ordinated."

His general statement of the connexion between localised co-ordinated muscular action and stimulation of the various centres of co-ordination in the hemispheres is as follows:—"In the cortex of the brain, and related to each other in a constant and definite order, are individual centres for each separate muscular action involved in the epileptic convulsion, and the theory is that the convulsions are due to the discharge of these centres in a tolerably uniform manner, much depending on the primary source of the irritation. The motor centres for the limbs are situated in the convolutions bounding the fissure of Rolando. The centres for the leg are situated in the postero-parietal lobule and upper part of the ascending parietal convolution. The hand and arm centres are localised in the ascending parietal and upper divisions of the ascending frontal; centres for different actions being distinctly differentiated. The posterior divisions of the superior and middle frontal convolutions contain an area, stimulation of which causes the head and eyes to be directed to the opposite side, and the pupils to dilate. The facial muscles and the muscles of articulation have their centres in the ascending frontal, in regions corresponding to the posterior extremities of the middle and inferior convolutions respectively. In the artificially-induced epileptic convulsions, by electrical irritation of the brain, in the lower animals, when the irritation starts primarily from any one particular centre, it is the first to be thrown into action, and then the others are discharged, usually in a certain order. The order most commonly observed is, that the centres seem discharged from before backwards, beginning with the head and eyes, which are most anterior, and ending with those of the leg, which are situated farthest back. This is the case apparently from whatever portion of the hemisphere the irritation proceeds, whether starting from a motor centre or from the most posteriorly-situated sensory areas. *Epileptic convulsions can be produced with quite as great readiness by application of the irritation to the sensory areas as to the motor areas themselves.* In some cases it would seem as if convulsions of a more general nature can be so excited, and it would appear as if, in such cases, the loss of consciousness occurs more early in the train of symptoms. And there is strong ground for the assumption that, by affections of

the sensory centres alone, those forms of epilepsy are to be accounted for which are ushered in by sensorial illusions, followed by loss of consciousness, without motor phenomena. These forms may, however, pass into motor epilepsy, and it seems as if the irritation is transferred from the sensory to the motor centres, just as there is a transference of nerve-energy from a receptive to a motor centre in the phenomena of reflex action. It is doubtful whether consciousness becomes lost when the motor centres alone are implicated. . . . Consciousness largely depends on the continuous receptivity of the sensory regions to impressions of an ento- or epi-peripheral nature, and a sudden perversion of the sensory regions may interrupt the seriality, and lead to loss of consciousness, just as a temporary hemiplegia may result from excessive action of the motor centres."

Dr. Carpenter accepts the results obtained by Dr. Ferrier without questioning the propriety of his method, or the accuracy of his observations. Referring to a series of unpublished experiments upon monkeys, he says that they correspond with those already before the public "in this important particular—that those centres of movement which may be regarded as giving expression to mental states that Man shares with animals beneath him, are all located in the *hinder part* of the *anterior* lobes and the *anterior portion* of the *middle* lobes—the part of Man's cerebrum which corresponds with the entire cerebrum of the lower mammalia." In the cat and dog stimulation of the posterior portion of the middle lobes produces no movement, and in the monkey, in addition to this, "*the whole of the posterior lobe is similarly irresponsible*, as is also that *front* portion of the *anterior* lobes, which in all the higher mammalia, as in Man, has that forward, as well as lateral, development which markedly distinguishes it from the corresponding part of the cerebrum of the rabbit. Extirpation of the antero-frontal portion of the anterior lobes, from which the animal seems completely to recover corporeally, induces a state of mental deficiency closely resembling dementia—the power of learning by experience, in particular, being abolished. Extirpation of the posterior lobes causes no loss of sensation or voluntary motion, but an apparent abolition of the instincts of self-preservation."

Dr. Ferrier's experiments have led him to the conclusion that the cerebellum contains the ganglionic centre of the motor nerves of the eye, which Dr. Carpenter regards as extremely interesting, as establishing that *physiological* connexion between vision and the

co-ordination of movements in locomotion, to which the pathological phenomena of *nystagmus*—where the rolling motion of the eye-balls is accompanied by a diminution of equilibrating power, and of *locomotor ataxy* where equilibrium can only be maintained with the eyes open—would seem to point.

The conclusions which these experiments justify are thus summed up:—*First*, the cerebrum “has a *reflex action* of its own, which manifests itself in the production of co-ordinated movements, such as in the normal condition of the animal would be the expressions of ideas and emotions called forth by sensations.” *Secondly*, “these movements are called forth, not by the mental states themselves, but by the cerebral changes, which are their *physical antecedents*.” *Thirdly*, “we seem able to draw from these experimental results a more definite *rationale* than we previously possessed, as to the automatic performance in man of movements which originally proceeded from intentional direction.” In fact, the phenomena of unconscious cerebration would appear to be due to unconscious excitation of those cerebral centres, which are the repositories of co-ordinations that are the result of habit. *Fourthly*, “those results entirely harmonise with the view, that the cerebrum does not act immediately on the motor nerves, but that it plays downwards on the motor centres contained within the axial cord, from which, and not from the cerebral convolutions, the motor nerves take their departure.” *Fifthly*, “these experiments throw great light on the ‘crossed’ action of the several ganglionic centres contained within the skull.” The motor action of the corpora striata is strictly limited to one side, while that of the corpora quadrigemina is not. *Sixthly*, the question is opened up, as to how far there is “any such localisation of strictly *mental* states, as there is of the centres of the expression of those states in movement.” What Dr. Carpenter can mean by the localisation of a “strictly mental state” is not very clear.

Dr. Merson has a paper on “The Urinology of General Paralysis,” at the end of which he thus sums up the results of his observations:—

“1. The quantity of urea varies above and below the average of health, being in the majority of cases considerably increased. Probably also the uric acid is increased.

“2. The quantities of chlorides and phosphoric acid are notably diminished; that of sulphuric acid remains about normal.

"3. The specific gravity varies within wider limits than in health, but the mean does not differ materially.

"4. The absolute quantity of urine passed is slightly below the average of the healthy cases examined, but, estimated according to weight of body, the amount excreted by seventeen general paralytics was slightly in excess of that excreted by six healthy men.

"5. Under the influence of Calabar bean there is a considerable diminution in the quantity of all the solid constituents, especially the urea.

"The results obtained in the three cases treated with alcohol are in favour of the view that both the quantity of urine and the amount of solid constituents are diminished under the influence of that substance."

Dr. Milner Fothergill contributes a brilliant article on "Cerebral Anæmia," in which, after enumerating the various causes which give rise to this affection, he proceeds to make some remarks upon the blood-supply of the various regions of the brain. He says very truly, that "the relations of the arteries of the brain to their regional distribution are now invested with an interest they had not hitherto possessed." The corpus striatum is supplied by the internal carotid, through the middle cerebral artery; the anterior portion of the brain and the eye, the middle portions of the brain, with the pia mater over them, are also supplied by branches of the internal carotid. The cerebellum is supplied by the vertebral arteries, partly before, partly after their union; the pons and medulla by the basilar artery. The posterior portions of the brain derive their supply from the posterior cerebral arteries, after they have taken up the communicating branches. "To put it broadly, the carotid supplies the anterior and middle portions of the cerebrum, the vertebral the posterior portion, while the parts at the base and interior of the brain are fed by branches from the circle of Willis and the basilar artery, and are so secured, as far as may be, against the risk of being cut off from their supply of arterial blood." Further, "the blood-vessels of the anterior and middle portions of the brain are derived from the inferior cervical ganglion, which is in close communication with the abdominal portion of the sympathetic." With these facts as a clue, Dr. Fothergill proceeds to show how *local* cerebral anæmia may be induced by various causes, and give rise to various mental conditions. He repudiates the notion that he wishes it to be understood that conditions of exaltation and depression are "simply and solely dependent upon

the amount of blood passing through the cerebral cells." The cerebral cells, no doubt, possess the power of "regulating their blood-supply according to their functional activity; but, on the other hand, blood-supply affects functional activity, and Bucknill and Tuke incline to the opinion that "the pathological condition of the cerebral cells is subsequent to, if not dependent upon, the pathological condition of the cerebral capillaries." Now, Cyon and Aladoff have shown that the vaso-motor nerves of the liver run down the vertebral arteries, and thence through the splanchnics to the coeliac ganglion, and along the hepatic vessels. Here, then, we have a direct nervous communication between the posterior lobes of the cerebrum, supplied by the vertebral arteries, and the liver; and Dr. Fothergill suggests that "by this communication, in all probability, we have the emotional portion of the brain affected by conditions in the abdominal viscera." This hypothesis is, at least, plausible, and deserves the careful consideration of physiologists and pathologists.

The depression produced by abdominal disease would appear to be due to anæmia of the emotional centres, there being generally no intellectual or motor disturbance. Where the intellect is affected, as in acute dementia, there are motorial anomalies. "Here, again, will anatomy, supplemented by physiological investigation, come to the rescue, and throw a ray of light over the darkness and obscurity which have hitherto surrounded this subject. The blood-supply of the corpora striata and of the motor centres of the convolutions, in front of the fissure of Rolando, are alike drawn from the distribution of the internal carotid. A condition, then, involving the anterior and middle cerebral lobes will include the motor centres. When, then, we have the intellectual centres involved, we find motorial disturbances; when the emotional centres are affected, there is no loss of motorial power. Possibly the motor and ideational centres may lie over one circulatory area, while depression and perverted systemic sensations may occupy another vascular distribution of their own. At least, such association is found in the combination of motor and intellectual disturbance in the general paralytic, where the anterior and middle lobes are chiefly implicated; while emotional disturbance, associated with abnormal systemic sensations, are commonly found together in the melancholic, where, according to Van der Kolk at least, the morbid changes are found in the posterior lobes. The very divisions of melancholia seem to bear out such a hypothesis. Thus we find

hypochondriacal mania where we have the depressing thoughts centred upon some organ or area; delusional mania, associated with lost, perverted, or exalted systemic sensations; religious mania, so certainly related with the reproductive organs; while in atonic mania mind and motor power are alike nearly annihilated, the consciousness of time and place is lost, even the sensations connected with bodily necessities are blotted out in oblivion, and there is a psychical void, combined with muscular paresis."

The symptoms of cerebral anæmia are numerous. *Dilatation of the pupil* is "one of the commonest accompaniments of cerebral anæmia." *Pallor of the face* is very frequent—*pallor of the eye* a still more valuable indication, especially where the ophthalmoscope reveals an anæmic condition of the disc and retina. This is distinguishable from atrophy of the optic nerve by "the uniform greyish-white appearance of the disc, and the fact that one disc is in exactly the same condition as the other." *The expression of the face* is peculiar. "There is a mingled look of sadness and general impairment of expression." There may be corrugation of the brows and depression of the angles of the mouth. *The general state of the circulation* is most important. There is an adynamic condition of the heart, and the arteries are diminished in volume, the pulse being feeble and compressible. The surface is reduced in temperature, *the hands and feet being cold*, and often blue from venous congestion. The skin is often dry, withered, and wrinkled. There is *drowsiness by day and sleeplessness at night*. The position of the head, it being erect during the day and recumbent at night, may have something to do with this. *Headache* is a very frequent symptom, being of a dull, persistent, unvarying kind, and usually vertical; frontal headache being rather associated with passing conditions of exhaustion from sustained intellectual labour. *Vomiting*, in the graver cases, may be produced by the patient suddenly sitting up. This may be due to sudden anæmia of the roots of the vagus causing the stomach to contract, as there is no nausea nor action of the abdominal muscles. *Palpitation of the heart* may similarly be caused by the vagus ceasing to act. *Sighing respiration* is frequent. *Constipation*, so common in cerebral affections, may be either a cause or a consequence of *cerebral anæmia*. *The general muscular condition* is one of relaxation and impaired power, the patient being "listless, unenergetic, and easily exhausted." In the earlier stages there may, however, be a condition of restlessness and irritability. There may be various

lesions of sensation, local or general anæsthesia, dulness of the special senses, and even hallucinations. The *psychical symptoms* are loss of mental power, melancholic depression, and, in the more pronounced cases, dementia. In the early stages there may be great irritability, and in some instances this is the chief symptom. There is frequently a feeling of being "cabined, cribbed, confined," either by some supernatural or natural power; or there may be some delusion with respect to attempts at poisoning, &c. In many cases the anæmic condition of the brain produces that craving for stimulants known as dipsomania.

The *prognosis* is favourable in simple cases, which do not depend upon grave physical disease. Those cases which have their starting-point in some mental shock are more favourable than those in which physical disease is the primary factor; while those which are complicated with dipsomania are among the most unfavourable.

Dr. Benham, in a paper "On the Therapeutic Value of Cold to the Head," narrates a series of elaborate experiments, made for the purpose of ascertaining the effects produced by the application of refrigerants to the head. The results of these have led him to the conclusion that no sedative or refrigerant effect is directly produced on the tissues within the cranium by such applications. It is, however, "extremely probable" that some temporary effect may be produced by reflex action. Great caution is necessary in the use of ice-bags, &c., since a bloodless state of the scalp may be accompanied by an engorged state of the cerebral sinuses, and it is even possible that the blood which would naturally go to the scalp may be diverted into the cerebral vessels.

The sedative effect of cold applications to the forehead, or scalp, in cases of severe head-ache, Dr. Benham acknowledges, but cannot explain.

The same writer has a paper on "The Actions of Nicotine," in which he relates some experiments, which tend to prove that nicotine is a stimulant to the heart, both directly and by paralysing the vagus. This paralysis of the vagus causes death by asphyxia when the dose administered is fatal.

Dr. Lawder Brunton's article on "Inhibition, Peripheral and Central," gives an interesting *résumé* of the current opinions on this subject. He thinks that there is sufficient evidence to warrant a belief that there are inhibitory centres in the brain itself. Simonoff's statement, that the most decided inhibition is obtained by stimulating the frontal lobes, tallies with Ferrier's observation, that these

lobes have no motor action; but Dr. Brunton has, as yet, not been able to obtain evidence of this inhibitory action by direct experiment.

Dr. Herbert Major continues his conscientious investigations with regard to the pathology of the brain. The conclusions which he gives us in his present contribution, which deals with senile atrophy of the brain, are, briefly, these:—The *cells* are morbidly affected in various manners and degrees—in the large ones the process being one of granular degeneration; in the small, of simple atrophy. The *nuclei* invariably partake of the degeneration, and the branches of the large cells are usually atrophied and destroyed at an early period. The smaller *vessels* and capillaries are dilated, the vascular canals being also dilated, and in a state of induration. The *nerve-fibres* are abnormally coarse and tortuous, and sometimes broken down. The *neuroglia* is atrophied and degenerated, its corpuscles being increased in number, shrivelled, and atrophied.

Dr. Robert Lawson attacks the subject of "The Hourly Distribution of Mortality," which, it appears, has its definite laws, ascertainable by means of statistics. The mortality of disease in general attains its maximum between 4 a.m. and noon, while acute diseases have a second post-meridian maximum. Chronic cases are most fatal between 4 and 9 a.m., the maximum being attained between 8 and 10 a.m. The general conclusions at which Dr. Lawson has arrived are:—

"1. That there are some hours which are associated with a great liability to death. 2. That in acute and chronic diseases the maximum hours of death are widely different. 3. That in chronic diseases a very large proportion of deaths occur at a period which may be said to range through one hour before and one hour after 9 o'clock a.m. 4. That acute diseases are characterised by two periods of marked mortality—the first in the dead of night,* the second in the afternoon."

"Acute Dementia" forms the subject of an article by Dr. Crichton Browne. It is, he tells us, the least hereditary of all forms of insanity, being a non-neurotic disease, and rarely due to moral causes—"the one moral cause which is effectual in inducing this disorder is monotony of thought and feeling, or mental inanition." Women and children are its most frequent victims,

* This statement is in direct contradiction of that of Dr. Finlayson (the principal authority cited), who states, as quoted by Dr. Lawson, that there is "a precipitate plunge towards a minimum reached at midnight" in acute diseases.

young prisoners being specially liable to it, from the monotony of their occupations. "The treadmill, if used perseveringly, would, indeed, seem to be an infallible method of producing this affection." The diagnosis from atonic melancholia is sometimes difficult, but melancholia is much more frequently induced by moral causes, is marked by the expression of suffering in the face, and is seldom accompanied by anæsthesia. In acute dementia there is little or no facial expression, there is anæsthesia, there is frequently quasi-cataleptic rigidity, the habits of the patient are dirty, salivation is common, and there is often obstinate vomiting. Imperfect nutrition of the brain, from anæmia, &c., would seem to be the cause of the disease, and Dr. Browne, referring to the cold and livid surface which marks the patient, asks:—"Now, may it not be, to use a crude comparison, that acute dementia is dependent upon cerebral chilblains? May it not be that a condition of atony of the intracranial vessels is the true explanation of all its symptoms?" The great benefit resulting from electrification of the brain is confirmatory of this theory. This, with good nourishment and tonics, of which quinine is the best, is the treatment upon which Dr. Browne chiefly relies.

The April number of the "Journal of Mental Science" contains little of interest to the general reader, with the exception of Dr. Clouston's Morisonian lecture, an abstract of which appeared in the Report on Mental Diseases, published in the *Irish Hospital Gazette* for May 15th, 1875.

Dr. Nicholson continues his observations on "The Morbid Psychology of Criminals," and now treats of "*States of Depression*, including Hypochondriasis, Home-sickness, and Self-innocence as to Crime." Melancholic conditions are much more frequent, as might be expected, in prisoners not yet hardened by frequent confinement, the earlier months of imprisonment being most liable to produce them. "The presence of an ultra-religious vein of thought is by no means uncommon. The patient has a 'mission,' or a 'power' has been given to him from on high. He feels himself to be pervaded by some abstract essence of good, and that his pulses throb with a mysterious potentiality which is denied to other men. They have a remarkable readiness in explaining or adapting passages of Scripture, according to their fancy at the moment." Delusions as to torture and poisoning are also frequent. Attempts at suicide are usually of a frivolous nature, to excite sympathy.

Dr. Shearer gives some information with regard to the prevalence of insanity in China, and gives it as his opinion that—"Diseases of the general nervous system are by no means unfrequent amongst the Chinese, but cases of alienation of mind are comparatively few." This he ascribes to the placid, contented habits of the people, their temperance, and methodical manner of life.

An article by Professor Friedrich Jolly, of Strasburg, "On the Family Care of the Insane in Scotland" is here translated. The writer regards the Scotch system as being fundamentally right, and contrasts it with that prevailing in Gheel, to the disadvantage of the latter. The danger of psychical infection of the sane by an insane colony he regards as somewhat chimerical; a much more important objection being the danger of sexual intercourse between the sane and insane. The pregnancy of insane women has, however, been much reduced in Scotland since the introduction of the family system—its occurrence among the pauper class, who are under the most strict supervision, being extremely rare.

Dr. George Thompson continues his remarks "On the Physiology of General Paralysis of the Insane and of Epilepsy." He believes in a local erectility of the brain, which, as well as we can gather from his by no means clear exposition of his views, is interfered with by the "sclerosed neuroglia," which he states to be characteristic of an epileptic brain. When the blood flows into a portion of the brain rendered rigid by this sclerosis, the nerve-cells are subjected to an unusual degree of pressure, and an epileptic seizure results. He attacks Doctors Hughlings Jackson and Ferrier for their theory of a "discharging lesion" in epilepsy; but apparently understands the word "discharging" to imply a "discharge" of some substance like pus! "Show me an 'open sore,' or a 'catarrh,'" he says, "and I will admit that here we have a 'discharging lesion;' but I aver that the term is not well applied to a disturbed function, such as that known as epilepsy."

The Pathological Significance of Nematode Hæmatozoa. By T. R. LEWIS, M.B. Calcutta. 1874. Pp. 54.

THIS paper is a reprint of an appendix to the "Tenth Annual Report of the Sanitary Commissioner with the Government of India."

In a previous paper the author announced the discovery in the

blood and urine of persons suffering from chyluria of minute immature nematode worms, which were named *Filaria sanguinis hominis*. In *post-mortem* examinations of persons so affected, although the immature worms were found very extensively throughout the body, nowhere could the mature parasite be discovered.

In the present communication, which is a continuation of his former observations, Mr. Lewis describes a nematode hæmatozoon which he finds to exist in a large proportion (more than a third) of the pariah dogs of Calcutta.

It was first discovered in the fluid squeezed from the mesenteric glands; it appeared, at first sight, to resemble very closely the *filaria sanguinis hominis*, but more careful observation showed such differences, that the author and Dr. Cunningham have no hesitation in pronouncing them to be distinct parasites.

The pathological appearances which accompany the presence of the embryonic worms in the blood of the dog are as follows:—

1. "Fibrous-looking tumours, varying from the size of a pea to that of a filbert or walnut, along the walls of the thoracic aorta and œsophagus, both tubes being affected, or only one."

These tumours are found to contain from one to six mature worms, varying from one inch to three and a-half inches in length. These are male and female, and correspond most closely to *filaria sanguinolenta*.—(Rudolphi).

2. "Minute nodules in the substance of the walls of the thoracic aorta, from the size of duck-shot to that of split peas. They can be felt as tubercles, and usually project somewhat on the outer surface of the vessel, a depression or slight extravasation of blood, corresponding to the nodule, being visible on the inner surface of the aorta, and frequently a slight abrasion of the lining membrane."

In these nodules the worms are found in various stages of growth, from the sexually-immature embryo to the perfectly developed males and females. The walls of the aorta are soft and fragile; and the inner coat roughened at the seat of the nodules, particularly the smaller ones, which enclose the immature worms. The appearances are confined to the thoracic aorta.

3. "A pitted or sacculated appearance of various portions of the interior of the thoracic aorta, with thinning of its walls at some parts; the lining roughened at the spots affected; the roughening, however, is

not of an atheromatous character, but due to the membrane being thrown into delicate rugæ, as if from contraction of the middle and outer coat."

These changes seem to mark the places where the parasites formerly existed, but which they have now left, either by emigration into neighbouring nodules or by death and absorption.

4. "Enlargement and softening of some glandular body adjoining the vessels at the base of the heart."

This was observed on only one occasion; the enlarged gland was degenerated into a pultaceous mass of oil molecules and cholesterine, and contained five mature worms. These pathological appearances may all be found in the same animal. They are illustrated by drawings, as is the anatomy of the parasite, for the description of which we must refer our readers to the original paper.

Although the intestine of animals whose œsophagus is occupied by tumours, contains numbers of ova, yet free embryos have never been found here, from which it appears that the ova require a longer time than is necessary for their passage through the intestine before the embryo escapes. All attempts to hatch the ova, either in moist earth or in the bodies of other animals, failed. Hence the relation of the embryos in the blood to those contained in the ova is, in some degree, uncertain, although from the absence in hæmatozoa-infested dogs of any other mature worm than those described, there can be little doubt that they are identical. The embryos do not seem to undergo any development in the blood, so this is, probably, not their normal habitat. They probably reach the body of some other animal, where they undergo their early stages of development, are then swallowed by the dog, and perforating the coats of the œsophagus come to maturity either in it or in the walls of the aorta.

In man hæmatozoa exist not only in cases of chyluria, but also in the closely-allied and often coincident diseases of the elephantoid class. In the one case (chyluria) the nutritive fluids of the body, blood and lymph, become extravasated on the free surface of the urinary tract; in the other (elephantiasis) into the subcutaneous tissue.

As we have said, the mature worm has never been discovered; but from the analogy of the dog, it is probable that it is swallowed in a partially-developed condition, perforates the intestine lower down than in the case of the canine parasite, and becomes mature in the walls of the abdominal aorta or some of its branches. We

must, however, refer to the text for further speculations on this subject, as well as on the production of chyluria and elephantoid inflammation by the hæmatozoa, and for the records of some interesting cases.

The Pathological Anatomy of the Nervous Centres. By EDWARD LONG FOX, M.D. London: Smith, Elder & Co. 8vo., pp. 401. With 19 coloured Plates.

NO work on the pathological anatomy of the nervous centres has hitherto existed in the English language. The large amount of knowledge which exists on this subject is mostly of recent acquisition, and is only to be come at by a laborious search through the periodical literature of many languages. In the volume before us the author aims at bringing into a convenient and readable form this mass of scattered information, and at supplementing it by his own pathological experiences, which have been acquired during many years of hospital work.

The book is based on lectures which have been delivered in the Bristol Medical School and in the Bristol Royal Infirmary. The colloquial style of the lecturer is in many places preserved, but the division of the subject into lectures is not maintained.

The following is the division adopted by the author:—

“It is proposed to divide the subject into two parts, and, first, to describe the pathological anatomy of the brain and spinal cord, and secondly, the mode in which these pathological results are grouped in certain conditions which symptomatically have been given special names, as mania, melancholia, &c. In pursuing this plan, it will be convenient to divide the first part of the subject into—(1.) Congenital Abnormalities of the Cerebro-Spinal Centres; (2.) Abnormalities of the Vascular System; (3.) Inflammations; (4.) Degenerations; (5.) Tumours; while the second part will include—The Pathological Anatomy of Mania, Melancholia, Dementia, Idiocy and Cretinism, General Paralysis of the Insane, Delirium Tremens, Paralysis agitans, Epilepsy, Chorea, Hydrophobia, Tetanus, Locomotor Ataxy and Progressive Muscular Atrophy, and Various Local Paralyzes.”

This is a pretty wide range of subjects, but on each of them the author gives a good deal of information, although in many cases it appears to us to be of a rather sketchy and undigested kind, and some of the theories broached are much in want of support, as, for

instance, that which attributes the symptoms and pathological changes met with in delirium tremens to the accumulation of carbonic acid in the blood.

Each chapter concludes with a bibliography, which, we suppose, makes no pretension to completeness, but merely indicates the sources from which the author has derived his information. In these bibliographical lists and throughout the work we have been struck by the absence of reference to German writers. We are very far from wishing to underrate the value of the work which has been done in this country in the field of pathological anatomy, but we think it must be admitted that of late years Germans have done far more than we, and that the kind of work they have produced is better than that done either here or in France. We were, therefore, surprised to find that, with the exception of the few German books translated by the Sydenham Society, and some references to the *Medical Record* and *Sydenham Society's Year Book*, scarcely any German authors are quoted. Notwithstanding, we think Dr. Fox deserves our gratitude for his book, which is sure to prove most useful to those whose time and opportunities do not allow them to refer to original sources for their information.

In conclusion, we would say a word of praise as to the way in which the book is brought out; the type and paper and binding are far above the average, and the plates are very beautifully executed, although many of the figures do not seem to be very well chosen as illustrating what they are intended to show.

PART III.

HALF-YEARLY REPORTS.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.*

By WALTER G. SMITH, M.D., Dublin; Fellow and Censor, K. & Q.C.P.I.; Examiner in Materia Medica, Q.U.I.; Assistant-Physician to the Adelaide Hospital.

ART. 1. Aconitia.

- „ 5. Anæsthetics.
- „ 2. Apomorphia.
- „ 3. Arnica.
- „ 4. Camphor, homœopathic solution of.
- „ 6. Camphor, monobromide of.
- „ 7. Ipecacuanha.

1. *Aconitia*.—Dr. John Harley, who has already accomplished much good work in pharmacology, has just published (*St. Thomas's Hospital Reports*, New Series, Vol. V.) some careful observations made at intervals during the last seven years, which deserve attentive consideration.

The objects he had in view were—first, to elucidate the precise action of aconite; and secondly, to ascertain whether or not it exercises any control over the febrile state. The pure crystallised aconitia of Mr. Morson, or of Messrs T. and H. Smith, of Edinburgh, was employed in every case.

Within the limits of this Report little more than the conclusions of the author can be reproduced, but a perusal of the admirably described details of the experiments will fully repay the reader.

I. *Physiological Action of Aconite*.—Four observations were

* The author of this Report, desirous that no contribution to the subjects of *Materia Medica* and *Therapeutics* should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal, they will be forwarded.

carried out on the horse; three, at long intervals, on a weakly brown colt of the pure racehorse breed, and the fourth on a sturdy grey entire horse, about fourteen hands high. $\frac{1}{100}$ gr. of aconitia, dissolved in rectified spirit, and injected under the skin of the shoulder, induced slight, but unmistakable, symptoms; $\frac{1}{30}$ gr. caused marked symptoms, attended with general muscular weakness; $\frac{1}{4}$ gr. proved very nearly fatal within eight hours, provoking symptoms closely akin to those which characterise hydrophobia. Finally, $\frac{1}{2}$ gr. of aconitia, dissolved in 3i. of rectified spirit, caused death in two hours and forty minutes.

In a young sheep-dog, weighing 21 lbs., $\frac{1}{400}$ gr. of aconitia, in m.v. of dilute alcohol, proved fatal in little more than half an hour.

A vigorous kitten, fourteen weeks old, weighing nearly 3 lbs., very nearly succumbed to the $\frac{1}{1000}$ gr. of the alkaloid injected in m.v. of water beneath the skin. A young cat, weighing nearly 3 lbs., succumbed seven and a quarter hours after the subcutaneous injection of $\frac{1}{300}$ gr. In another half-grown cat, weighing 3 lbs., death occurred in three-quarters of an hour after the subcutaneous injection of $\frac{1}{300}$ gr.; and a female cat, two years old, was killed in twenty minutes by $\frac{1}{8}$ gr.

Several experiments were instituted on the human subject; on a large lethargic man, aged fifty-four, and on boys. In the man, $\frac{1}{400}$ gr., taken by the mouth at intervals of three days, always caused slight tingling in the mouth and face; and doses ranging from $\frac{1}{75}$ to $\frac{1}{30}$ gr. always produced in adult males decided aconitism—general numbness and tingling, nausea, giddiness, somnolency, and muscular weakness. This latter is always a prominent effect, and it strongly resembles the condition induced by hemlock. $\frac{1}{100}$ gr. given repeatedly, at intervals of three days, to a well-developed boy, aged twelve, afflicted with epilepsy, constantly gave rise to pronounced symptoms of aconitism.

The composition of the hypodermic solution of aconitia employed on man was as follows:—

Aconitia	. . .	1 grain.
Acetic acid	. . .	1 minim.
Rectified spirit	. . .	2 fluid drachms.
Water	. . .	Sufficient to make the mixture measure 2,000 grain-measures.

Dissolve. $5\frac{1}{2}$ minims (= 5 grain-measures) = $\frac{1}{400}$ gr. of aconitia.

This solution will keep unchanged for years; a drop of a solution

prepared four years previously, when placed on the tongue, produced numbing and tingling of the palate for five hours afterwards. Dr. Harley has used this solution in doses varying from $\frac{1}{1000}$ gr. ($= \frac{1}{320}$ by the mouth) to the $\frac{1}{400}$ gr. ($= \frac{1}{80}$ by the mouth). The $\frac{1}{1000}$ gr. rarely produced appreciable effects; the $\frac{1}{400}$ caused effects equal in intensity to the $\frac{1}{80}$ gr. when given by the mouth. Beyond this dose it was not thought safe to go. The injection always produced considerable local burning, pricking, and smarting, but never inflammatory action. Dr. Harley has employed it in cases of spasm of the voluntary muscles and in sciatica, but without benefit, and he has come to the conclusion that the alkaloid is unfit for subcutaneous use.

The following abstract of the author's summary represents in brief the phenomena which are detailed in the notes of the various experiments:—

1. Aconite affects a portion of the cranio-spinal axis in the same manner that strychnia affects the whole. It produces an excitation which results in intermittent spasm.

2. The focus of the action of aconite is the medulla, about the roots of the pneumogastric, hypoglossal, and spinal accessory nerves. Thence its influence radiates along the cranio-spinal axis with rapidly diminishing intensity, as far forwards as the centres of the third nerve, and as far downwards as the origin of the phrenic.

3. Beyond the limits above indicated aconite exercises a depressing influence on the cranio-spinal axis, almost amounting to paralysis.

4. The action of the alkaloid on the sensory function appears to be co-extensive and co-equal with that on the motor function, the area for intense action having the same limits, beyond which the anæsthesiant action rapidly diminishes in intensity.

5. Apart from the derangement of accommodation, due to spasm or enfeeblement of the muscular apparatus of the eye and the ear, the senses of sight and hearing were unaffected; the latter, indeed, was *apparently* wholly unaffected. There was no evidence of any impairment of smell. Taste was, without doubt, greatly disturbed, both on account of its relation to common sensation, and of the deep implication of the fifth nerve.

6. Beyond the slight depression of function resulting in somnolency (after medicinal doses, and in the intervals of the paroxysms which follow poisonous ones) aconite has no direct influence on the

brain, and the effects produced by asphyxia have usually only a brief duration at the end of a paroxysm, or immediately preceding the death of the animal. The intense distress of impending suffocation produces, however, a total disregard for everything else but the desire for relief, and thus the animal rages frantically about as if actually delirious.

7. The sympathetic nerve is unaffected. At the moment of death the pupils dilate vigorously, and after death the heart may continue to pulsate, or, if the right heart be arrested by distension, its action may be revived by depletion. The contracted left heart is still, only because it is empty. From the evidence adduced Dr. Harley thinks it conclusively proven that the heart is only secondarily affected, and as a consequence of the respiratory difficulty.

8. Death results from asphyxia, and progressive collapse of the lung, the former being due to the spasmodic closure of the respiratory passages and paralysis of the muscles of inspiration, and the latter to paralysis of the muscles of expiration, and notably of the diaphragm, which is tucked up higher and higher by the intermittent efforts of the upper intercostals, the scaleni, and sternomastoid muscles.

Dr. Harley appeals to an examination of the published cases of poisoning by aconite, in confirmation of the facts and explanations which he has adduced.

II. *The influence of aconite on the febrile state.*—The following is the formula of the mixture used in the various cases:—

Aconitia . . . 1 grain.

Rectified spirit . . 6 fluid ounces.

Camphor water . . To measure 5 pints (100 fluid ounces); mix.

3ss. = $\frac{3}{800}$ of a grain of aconitia.

The aconitia was always given in a single dose, and, excepting in a few cases, once only in the twenty-four hours. In a few other cases a dose was given on alternate days only. It was soon found that nausea and vomiting, often followed by diarrhoea and partial collapse, occurred when the dose was given twice in the twenty-four hours. The drug was administered in fifteen cases of scarlatina, for the most part, of moderate severity. All did well, and escaped any serious complications, but from a review of the cases the author failed to see that the aconitia exercised any appreciable influence on the course of the fever.

Aconitia was prescribed as above in twenty cases of typhus fever, which illustrated the full development of the disease in young subjects. Without venturing to dogmatise from limited data, the author thinks that the crisis occurred early, and, comparing the cases generally with similar ones under different but simultaneous treatment, he was led to entertain the idea that the aconite cases passed through the disease remarkably well.

For the particulars of the cases we must refer to the original paper.

One case of relapsing fever treated by aconitia is given by way of example. A girl, aged twenty, was admitted on the seventh day of an attack of relapsing fever. She took the $\frac{1}{100}$ of a grain of aconitia from the seventh to the sixteenth day, inclusively. She continued well, and ate full diet from the ninth to the fourteenth day (the apyretic interval), the pulse being 84, the temperature normal, and the tongue moist. On the fourteenth day from the commencement of the primary fever she had a relapse, and the secondary fever was more severe than the primary. At the acme, on the sixteenth day, the pulse was 120, temperature 104° , and there was slight delirium. On the twenty-fourth day the pulse was 116, temperature 102° . On the twenty-seventh she resumed full diet, and left the hospital on the forty-second day.

This case illustrates the general conclusion to be derived from the whole of the foregoing cases—viz., that if it be conceded that aconite ameliorates the febrile condition, it does not much control it; and it further shows that it cannot in any degree anticipate or cut short the pyrexial stage in a disease, against which, if it did possess the febrifuge properties ascribed to it, its influence ought to be most marked.

2. Apomorphia.—The employment of this new and potent alkaloid, of which an account has been given in former Reports, although offering some decided advantages, is not without its inconveniences, and even risks, and the following observations are in point:—

Some months ago Dr. Perriquet, of Beuzeville, was led to make frequent use of hydrochlorate of apomorphia in his practice, and, within a short space of time, provoked vomiting by means of it in eight persons. Each time he injected 1 cgm. (0.15 gr.) of the salt dissolved in water, to the amount of two-thirds of Pravaz's syringe, and each time vomiting uniformly supervened at the end of ten,

fifteen, or twenty minutes, without any alarming symptoms. A ninth patient, affected with simple catarrhal sore throat, was at first (December, 1874) treated by a purgative and gargles. He went on so well that at the end of eight days he resumed work as a road-labourer. Two days afterwards he had a suffocative attack, attended with moderate fever. He could scarcely open his mouth, the soft palate was red and tense, the tonsils were enormously swollen, and pus was evidently forming. 1 cgm. of hydrochlorate of apomorphia was injected under the skin of the arm, below the deltoid. At the expiration of ten minutes the patient complained of feeling a desire to sleep, but no inclination to vomit. He then suddenly threw himself backwards, flexed his arms, and uttered some hoarse cries. The lower jaw was so tightly clenched that the tongue depressor, which was introduced between the teeth, was twisted, and it was impossible to forcibly extend the flexed forearms. The pulse was very small, there was marked coolness of the skin, and the sounds of the heart could scarcely be distinguished. In a state of complete opisthotonos the man rested on the bed, supported on the neck and heels. This state of things lasted for four or five minutes, when the patient suddenly fell back on the bed, saying, "You have caused me severe pain." In a few seconds more the rigidity disappeared, and the man sank into a deep sleep. He slept calmly for two hours, at the end of which M. Perriquet succeeded in opening a tonsillitic abscess. Three days afterwards tonsillotomy was performed, and the operation was followed by tendency to syncope. The man was not subject to epilepsy. The packets of the apomorphia salt were submitted for examination to M. Carville, who certified its excellent quality. Each packet included exactly 1 cgm., and the dose contained in the syringe was not completely dissolved. Similar alarming accidents to that just related have been observed by others, and they appear to have followed especially in those cases in which vomiting had either not been induced, or had been delayed. M. Moeller, to whom this remark is due, has related the history of a man, aged sixty-three, affected with chronic gastric catarrh, who, ten minutes after injection of 5 mgm. ($\frac{1}{15}$ gr.), was seized with pallor of face, trembling, confusion of sight, small pulse, profuse perspiration, and inclination to sleep. At the end of twenty minutes he vomited a little; coffee was administered to counteract the somnolence. He was able to walk home in an hour and a half, and, indeed, in none of the cases have the symptoms persisted long. In Dr. Loëb's practice a young man, after the injection of a solution

which had been kept for some time, fell into a state of asphyxia and coma. While endeavouring to draw the tongue out of the mouth, Dr. Loëb provoked copious emesis, followed by an immediate subsidence of the grave symptoms. Again, Dr. Prevost, of Geneva, has recorded a case (*Bull. Méd. de la Suisse Romande et Méd. Rec.*) in which he injected subcutaneously 3 or 4 mgm. of apomorphia in a woman suffering from sore throat, with gastric disturbance. A state of collapse tending to syncope was produced, which continued for fifteen or twenty minutes, during which the pulse could scarcely be felt, and the pupils were dilated. In this instance the customary vomiting was established at the end of five minutes, and was repeated several times. The patient fell into a deep sleep, which lasted for about half an hour after the period of collapse.—(*Journ. de Méd. et de Chir.*, Juin, 1875).

Compare the abstract of Harnack's interesting observations on the action of apomorphia on mammals and the frog.—(*Lond. Med. Rec.*, March 7, 1875, from *Centralbl. f. die Med. Wissensch.*, ii., 1875).

3. *Tincture of Arnica condemned*.—Dr. James C. White is convinced, from his own experience, that not only is arnica valueless as an actual remedy, but that it is often positively noxious. He relates (*Boston Med. and Surg. Journ.*, Jan. 21, 1875) three cases in which the application of an arnica lotion to excoriations occasioned severe outbreaks of acute inflammation, accompanied by development of papules, vesicles, excoriations, crusts, and scales, in regular sequence. The local symptoms were intense itching, and some degree of burning. The mischief-making powers of arnica are much more frequent than is commonly supposed, and if its deleterious and toxic effects are seldom recognised, it is because all the disturbances really due to this so-called remedy are laid to the account of the injury. Dr. White coincides with Hebra and T. Fox in ascribing the feeble therapeutic properties of tincture of arnica solely to the presence of the alcohol (cf. Garrod's *Mat. Medica*, 3rd ed., p. 267). The dangerous qualities of arnica have also been appreciated in France.—(*Rev. de Thér. Méd. Chir.*, No. 9, 1875).

[The following remarks, taken from Dr. Charles Phillips' *Mat. Med. and Ther.*, 1874, throw considerable light on the discrepant statements which have been made respecting the effects of arnica. The ingredient in arnica long supposed to be of most consequence

was *arnicine*, an amorphous bitter substance, almost insoluble in water, but freely soluble in alcohol and ether; or else the ethereal oil, which is also insoluble in water. For a variety of reasons, it is now probable that neither *arnicine* nor the oil, but *trimethylamine*, an organic alkali, is the really useful constituent of *arnica*.

Trimethylamine, C_3H_9N , is a clear, colourless fluid, very volatile, and freely soluble in water, alcohol, and ether.

"The external effect of *arnica* involves important questions, for while it is known that many persons have found it an excellent application for bruises and for wounds, other observers have complained that it produces either an actual erysipelas, or a peculiar violet-coloured eruption, attended by great heat and pain. I venture to affirm that these are physiological consequences of the alcoholic, and not of the aqueous solution, which latter contains neither *arnicine* nor the oil. I have never seen inflammatory consequences follow the application of the purely aqueous lotion to wounds or bruises."—(P. 306.)

"For external bruises and cuts *arnica* is, undoubtedly, very useful; and, as already observed, the mischances that have attended its use have probably resulted from the fact that the tincture, containing *arnicine* and the volatile oil, has been employed. The infusion or decoction alone should be used, and it would be better to give up employing all liniments and lotions in which the tincture is present."—(P. 309.)]

4. *Poisoning by Homœopathic Solution of Camphor.*—Dr. G. Johnson adds another case (cf. Report, February, 1874) communicated to him by a former pupil. A lady, aged thirty-five, suffering from a feverish cold, was given by her sister seven drops of homœopathic solution of camphor on a lump of sugar. Immediately after taking it she was attacked with faintness, which compelled her to lie down on the floor, and she nearly lost consciousness. This lasted about five minutes. When seen by the doctor her face was very pale, the pulse weak, and she was very drowsy after being put to bed. The homœopathic solution contains 1 oz. of camphor in $7\frac{1}{2}$ ozs. of spirit.—(*Brit. Med. Journ.*, February 6, 1875.)

Dr. Legat and Mr. F. Ellerton each records a case in which serious symptoms followed the taking of this solution for a cold or for a toothache. In one case, a lady, aged twenty, was seized with giddiness, convulsions, and vomiting, and became unconscious for some time. Headache, giddiness, and mental

confusion persisted for some hours, although she had taken only about fifteen drops of the solution.—(*Brit. Med. Journ.*, February 20, 1875.)

Another case was sent to Dr. G. Johnson, by Mr. Gooch. A boy, aged fourteen, became insensible immediately after taking about fifteen drops of Rubini's homœopathic camphor on sugar.

This makes the seventh case of poisoning by homœopathic concentrated solution of camphor that has come to Dr. Johnson's knowledge during the last two years.—(*Brit. Med. Journ.*, February 27, 1875.)

5. *Anæsthetics*—(a.) *A Case of Chloroform Narcosis resuscitated by Nélaton's Method*.—Dr M. H. Jordan, of Birmingham, Alabama, relates a case in which inversion of the body, as recommended by Nélaton, proved speedily successful when respiration and pulse had ceased, and the patient, a young lady aged eighteen, was apparently dead. Artificial respiration was diligently kept up, and at the expiration of four hours from the inhalation of the chloroform for tooth-extraction, she was able to drive to her home, a distance of five miles.—(*Amer. Practitioner*, February, 1875.)

In connexion with this we may refer to the *Lancet*, May 8, 1875, where Mr. Bader gives scanty notes of three cases, to illustrate the value of inhaling nitrite of amyl (3 to 10 drops) in syncope and threatened asphyxia from chloroform inhalation.

(b.) *Habitual Ether Inhalation*.—An interesting and probably unique case, by Dr. C. Ewald, in which enormous quantities of ether were inhaled, solely for the purpose of intoxication, is translated, in the *Lond. Med. Rec.*, April 7, from the *Berl. Klin. Wochensch.*, March 15, 1875. The wretched man at last came to consume 2 or 2½ lbs. of ether in a day, and had thereby fallen from a respectable station to a degraded condition, resembling the state induced by chronic indulgence in alcohol.

An experiment was instituted by administering to him more than 7 ozs. of ether. Yet with this quantity only a transient narcosis was produced. The urine passed, immediately before and after the experiment, was of a pale yellow colour, and quite clear; sp. gr. 1·009 and 1·006, without anything abnormal, and having no smell of ether; it was subjected to distillation without result. So far, therefore, as this observation goes, the assertions regarding the presence of sugar, bile pigment, and blood in the urine of man under the influence of ether are not applicable.

(c.) *Nitrous Oxide*.—Dr. H. Barnes speaks in the highest terms of this gas as an efficient substitute for ether. Drs. Ball and Fitch, dentists in Boston, have administered protoxide of nitrogen no less than 15,000 times, and have met with only two patients who proved refractory to its influence.—(*Med. Times and Gaz.*, February 27, 1875.)

Per contra, Dr. T. Blanche, as the result of his experiments and inquiries (*Thèses de Paris*, 1874), comes to the conclusion that protoxide of nitrogen being a gas which only produces anæsthesia as a consequence of the asphyxia which it causes, and its use having proved fatal in several instances, its employment ought to be, if not completely abolished, at least greatly restricted in medical practice.—(*Lond. Med. Rec.*, April 7, 1875.)

6. *Monobromide of Camphor*.—In a recently published pamphlet Dr. Pathault furnishes an abstract of the literature of this compound, which was discovered and described by Swartz in 1862, and was introduced into medicine in 1871 by Deneffe. On the physiological action of the drug, to which he adds one or two original observations, he closely follows M. Bourneville and Dr. Lawson, and finds that it is eliminated in the urine.

It lessens the frequency of the pulse and the number of respirations, causes a marked and regular depression of temperature, and exerts a decided hypnotic influence (on guinea-pigs and rabbits). On the whole, it appears to be an energetic nervous sedative and an undoubted anti-spasmodic; but certain difficulties and objections attend its continued use.

It has been administered in delirium tremens, insomnia, chorea, infantile convulsions, hysteria, dyspnœa, neuralgia, irritative genito-urinary affections, and in a considerable number of cases of epilepsy by M. Bourneville. This observer thinks that bromide of camphor is formally indicated in vertiginous epilepsy; but, with the exception of reducing their frequency, it cannot be said to have much influence on the fits themselves.

From the insolubility of the drug in water, it may be administered in pills, *dragées*, or capsules; preferably the latter (each capsule containing 3 grs.) The doses hitherto given have varied from 6 to 60 grs. The remedy is not adapted for hypodermic injection.

The experience of MM. Trasbot, Dujardin-Beaumetz, and Gubler (*Lond. Med. Rec.*, March 3, 1875) does not confirm the

good effects claimed for this medicine, and doubt is cast upon some of M. Bourneville's physiological observations.

Dr. Valenti y Vivo (*Siglo Medico*, April 18, 1875) has made a series of researches on dogs, and has arrived at the conclusion that monobromide of camphor may be considered antidotal to strychnia. The physiological antagonism is comparatively limited, and a full dose, from 60 to 90 grs., should be given in small and repeated quantities.—(*Pharm. Journ.*, June 26.)

7. *Ipecacuanha*.—Under the form of a special report to the Surgeon-General of the U.S. Army (reprinted from the *Atlanta Med. and Surg. Journal*), Dr. Woodhull has written an interesting essay on the use of large non-emetic doses of *ipecacuanha*. From his own observation, as well as through an extended inquiry into the literature of the drug, the author has come to the conclusion that the influence which *ipecacuanha* exerts over dysentery and certain forms of diarrhoea is not practically recognised by many physicians who, while they have read of its power, hesitate to employ the remedy.

In the treatment of dysentery the author's experience confirms, in the clearest manner, the successful results which have been claimed for the *ipecacuanha* method in India, and an analysis of the twenty-four cases reported by the writer fairly demonstrates two facts—Firstly, the promptness with which the ordinary sporadic dysentery yields to large doses of *ipecacuanha*; and secondly, the use of *ipecacuanha* in 20 and 30 gr. doses is not necessarily followed by emesis. 73 full doses (20 grs. and upwards) of *ipecacuanha* were administered, and 47 of these provoked no vomiting whatever, while but 4 of the cases of vomiting occurred within the first hour. "There are two methods of administration. On an empty stomach give from 15 to 25 minims of the tincture of opium in a small quantity of water; 15 or 20 minutes later apply a counter-irritant to the epigastrium, and at the same time give the powdered *ipecacuanha* in as little water as possible. With care, a little more than 2 fluid drachms of water will make 30 grs. of *ipecacuanha* into a paste sufficiently liquid to be swallowed; or, for those who take pills easily, that form may be employed. In such cases the opium, in the proportion of 1 gr. to 20, may be incorporated in the pill. 25 grs. of *ipecacuanha* can be put up into two boluses, or 20 grs. of that drug and 1 of opium will make up into 4 pills. Laudanum might be used in the pill form of *ipecacuanha*, one advantage of

which is that the local effect of the opiate is not dissipated before the other drug begins to be absorbed. Recumbent rest must be strictly maintained, and no food or drink be taken for at least four hours, and usually longer. The dose may be repeated in from two to six hours; or, should the first be rejected, the second may be given as soon as the stomach is settled."

Dr. Woodhull is one of those who recognise in ipecacuanha peculiar powers over and above its emetic quality, and he adduces, without adding any original observations, a large body of testimony as to its value in controlling serious hæmorrhages. He also suggests the probable usefulness of ipecacuanha in Asiatic cholera, and after spinning an ingenious theoretical web of argument in support of this proposition, he concludes that "ipecacuanha is a peculiar, but direct, nervous stimulant, acting chiefly, and probably entirely through the medium of the sympathetic system."

PART IV.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL
SOCIETY.

THIRTY-EIGHTH ANNUAL SESSION.

Saturday, 10th July, 1875.

LOMBE ATTHILL, M.D., President, in the Chair.

Case of Pelvic Narrowing ; Induction of Premature Labour by Hydrostatic Dilatation ; Bi-polar Version ; Combined External and Internal Method.
By JOHN A. BYRNE, M.B., &c., &c.

I VENTURE to bring this case before the Society, inasmuch as it possesses some points of practical interest.

On February 27, 1874, I was called to visit Mrs. L., in labour of her first child. There was nothing in the commencement of labour, according to the statement of the nurse in attendance, to make her imagine that there would be any difficulty; but as a considerable time had elapsed since the commencement of the second stage, and the head was making no progress, she asked her friends to send for me. When I saw her in the evening the uterine pains were strong and frequent, and had been thus for some time. The examination, per vaginam, revealed an os dilatable, a head arrested in the first position at the pelvic brim, a funis prolapsing and with still a pulsation, a very prominent sacral promontory, and her general condition was that of a woman who was becoming exhausted from ineffectual labour pains.

These signs I need not recapitulate, as they are always manifested when the uterus is unable to expel its contents through the osseous passages; and every practitioner who is familiar with difficult cases of labour recognises at a glance the condition and the necessity for interference.

Having placed the patient under the full influence of chloroform, I

introduced the forceps, and after repeated trials I failed in making the slightest impression upon the foetal head; it lay still above the pelvic brim. Under the circumstances, I asked the assistance of my friend, Dr. Kidd, who kindly came at 11 p.m., and saw her with me.

At his visit matters were much in the same state; with this exception, that the woman was more exhausted, and the pulsation in the funis had ceased. Dr. Kidd made a most careful examination, and arrived at the same conclusion as I had done, that there was considerable antero-posterior narrowing—certainly to the extent of two and a half or less than three inches, and that the promontory was very distinct, and the pelvic cavity small. As far as we could ascertain, this appeared to be the case.

The woman was young—twenty-five or twenty-six—had soon conceived after marriage; was stout in figure. The pelvis appeared extremely normal in width and size. She had short clubbed fingers, and the only reason which she could assign was that when a child—about four years—she had received a fall, which caused her mother to keep her in bed for some time, and her occupation was that of carrying milk-cans in early youth. This may have predisposed the pelvis to take on the masculine type of development, perhaps; and her mother remarked that for a long time she walked on one side.

Dr. Kidd applied the forceps a second time, but with the same result. No impression was made upon the head; it did not descend, and as neither of us believed that any further attempts to deliver with the forceps would be either of any use or justifiable, and as the funis had ceased to pulsate, we determined to lessen the head.

This was accordingly done, and the crotchet was used, but even then the difficulty was not overcome; it was found impossible to bring the base of the skull through the brim, and cephalotripsy was had recourse to; and after some time, and the second application of Dr. Kidd's cephalotribe, we succeeded in delivering, and extracted a male child, which was very large and full grown.

On subsequent examination of the pelvis our previous conclusion was strengthened as to the narrowing of it and its diminished antero-posterior diameter. It is needless to detain the Society by dwelling at any length upon the subsequent details of the woman's convalescence; it is sufficient to say that she recovered without a single bad symptom, and that she was up and well on the tenth day.

In July, 1874, she again became pregnant, and consulted me. I explained to her that it was impossible that she could ever have a living child at the complete period of gestation, and I recommended to her that when she had passed the seventh month of pregnancy, premature labour should be induced, in order to afford the chance of life to the child. This she willingly assented to, and on February 18, 1875, when,

according to her own account, and to all appearance she had passed the seventh month of pregnancy, I made arrangements to induce it.

The mode which I determined to adopt on this occasion was that recommended by Dr. Barnes—the hydrostatic dilatation. My reason for preferring this method in preference to Kinisch's, or Sinclair's, or Scanzoni's, or others, was this, that I expected to have the most perfect control over the labour, and that on the removal of the largest of the bags I could perform version. This I think one of the greatest advantages of Dr. Barnes' plan, as you can never tell the moment when labour will set in by adopting either of the other plans; and, moreover, it is comparatively free from any danger, such as is known to have followed the use of the douche.

On this occasion I had the assistance of my friend, Dr. More Madden.

Having emptied the bowels by an enema at 8 p.m., I introduced the smaller bag into the canal of the uterus, and allowed it to remain until three hours; the effect of its introduction was to induce uterine action, and when, at 12, the second bag was introduced, uterine action was well established. In the introduction of the second bag an unforeseen circumstance occurred—the sound passed through the small pocket of the bag, which is placed at the uterine end for the purpose of pushing it on; the effect was this:—it ruptured the membranes, and a good deal of the liquor amnii escaped, but when the second bag was introduced this flow was arrested. The second dilator remained in the cervix till near 2 a.m., at which hour we saw her, but the uterine action which was set up was so strong that it had pushed out the second bag shortly before our arrival, as the attendants had noticed that it was just then the waters had commenced to come away. The bag itself was lying in the vagina. I removed it, and introduced the largest dilator at 4 p.m., and left it in for an hour or more. The uterine action now became very strong and persistent, and we agreed that we should remove it, as it had been in for two hours, and that it, in all probability, had by this time effected its object.

She was placed again under the influence of chloroform by Dr. Madden. The urine was drawn off by the catheter.

I used the left hand in operating for the following reasons: it is a little smaller; it is better adapted to the sacral curve; and it is more easy to catch the knee of the child when the hand is in the uterus. This plan I have for a long time adopted in performing version, and, in fact, I never use the right hand. I perceive that both Dr. Braxton Hicks and Dr. Barnes recommend the left hand to be used for reasons similar to mine. I may here mention that in cases where I have found it necessary to extract adherent placenta I generally use the left hand, but sometimes the right. The bag was removed and the fingers of my left hand, in the form of a cone, were introduced into the vagina, and

thence into the cervix. Now, it was easy to penetrate the lower or vaginal portion of the cervix, but when I came to pass the fingers into the upper or uterine portion I found that it was not yet dilated to the full extent, although the largest bag had been in for more than two hours. I think it necessary to give these details, inasmuch as it is better always, if possible, to know the precise effect of such mechanical appliances. After some time, however, the cervix yielded, and I was enabled to feel the head of the child lying in the first position, above the pelvic brim. When my hand, or rather five fingers, endeavoured to pass through this it was caught at the base of the cone, and the nature of the narrowing was manifest. The whole inlet was contracted, and there was evidently an antero-posterior measurement of but three inches.

Kneeling at the side of the bed, with Dr. Madden well supporting the pelvis at the same time that he exhibited the chloroform, I placed my right hand upon the abdomen of the mother in the neighbourhood of the breech of the fœtus, and by the alternate movements of pressure and friction towards the opposite side of the abdomen, and raising the child's head towards the iliac fossa, or rather merely tilting it with the tips of my left fingers at the same moment, in a few minutes the head became displaced from the brim into the left iliac fossa, and the foot of the child came down towards the brim. I grasped the knee and brought the leg towards the inlet, and still pressing the child downwards with the right hand, after some time the body of the child came down. There was a good deal of delay and a good deal of difficulty in dragging the head through the brim, and the funis during this part of the proceeding ceased to pulsate; however, after a time I extracted the head, and a female child was born, which, after a very long attempt at restoration by the usual methods, came to; it lived, however, only six hours, and to all appearance had attained the end of the seventh month of intra-uterine life. There was a slight contusion on the right parietal bone corresponding to the point of pressure, as the head passed the pelvic brim, but no injury was done to the cranium.

The mother recovered, and was able to be out of bed on her ninth day, and her convalescence was perfectly normal.

In performing the operation I followed the plan laid down by Dr. Braxton Hicks, and which was brought before the notice of the profession in papers published in the *Lancet* of 1860 and 1861, and were subsequently published, with additional remarks and cases, in Vol V. of the London Obstetrical Transactions.

As, perhaps, some of the members of the Society may not have had their attention directed to Dr. Hicks' essay on the subject, I shall briefly describe the operation as performed by him, with the permission of the Society.

At page 223 of the London Obstetrical Reports, having given a brief

résumé of the history of version, and of the reasons which induced him to perform it, he proceeds to describe bi-polar version. He says:—

“We will suppose a case where everything is normal: the os uteri dilated to admit one or two fingers, membranes perfect, and the face directed towards the right side. The patient may be placed in the ordinary obstetric position.

“Having lubricated my left hand, I introduce it as far into the vagina as is necessary, in order to reach a finger’s length within the cervix. Sometimes it requires the whole hand, sometimes three or four fingers will be sufficient in the vagina. Having clearly made out the head and its direction, whether on one side or other of the os uteri, I place my right hand on the abdomen of the patient towards the fundus. I then endeavour to make out the breech, which is seldom a difficult matter.

“The external hand then presses gently but firmly the breech of the right side; as it recedes so the hand follows it either by gentle palpation or by a kind of gliding movement over the integuments, while at the same time the other hand pushes up the head in the opposite direction, so as to raise it above the brim.

“It may here be mentioned that when the head has descended a considerable distance into the pelvic cavity, or more than half way through the os uteri, it is scarcely possible to lift it above the brim, especially if the uterus be active.

“When the breech has arrived at about the transverse diameter of the uterus the head will have cleared the brim, and the shoulder will be opposite the os, that is pushed on in like manner as the head, and after a little further depression of the breech from the outside, the knee touches the finger and can be hooked down by it. It very frequently happens when the membranes are perfect that as soon as the shoulder is felt, the breech and foot come to the os in a moment, in consequence of the tendency of the uterus to bring the long axis of the child coincident with that of its own. Should it, therefore, be difficult to hook down the knee, depress the breech still more, and it will be almost always the case that the foot will be at hand.

“It will sometimes render turning more easy if, as soon as the head is above the brim, we pass the outside hand beneath it, and push it up from the outside alternately with the depression of the breech. All this can generally be performed in much less time than I have taken to describe it, although in some it requires gentle, firm, and steady perseverance, with such a supply of patience as is always demanded in obstetrical operations.

“If the os will only admit one finger, and the foot cannot be brought through in consequence, it can yet be retained at the os by pressing it with that finger against the inner surface of the os, the most convenient part being against the anterior parts, because the pubes will assist in

supporting the pressure, while at the same time, in most persons, unless very stout, the hand pressing externally above the pubes, is capable of assisting us materially in retaining the leg in that position, and securing the allied change, ready for us to take advantage of it, should the case so require it as soon as the os dilates sufficiently, and the mere retention of the leg here is of considerable value, for, as I dare say others can bear me out, in cases of turning, even when we cannot effect turning immediately after having seized one of the limbs, yet the holding on to that part, and newly fixing it, ultimately produces such an improved relationship between the uterus and its contents that the after-operations succeed more easily. This is doubtless partly by the action of the uterus and partly by a gentle and insensible traction on the part at the same time.

"Should the child face toward the left side, the only difference required in operating is, that the breech be pressed toward the left side, and the head to the right."

Dr. Hicks then gives directions for proceeding according to the position of the child in utero which are highly useful and important; but as it would occupy too much time to read them to the Society, I may refer them to his treatise in the fifth volume of the London Obstetrical Transactions.

Dr. Hicks then sums up the advantages of this mode of turning, which he divides into two classes—those of avoidance and those of acquisition. He says:—

"1. We shall avoid the addition of the hand, and perhaps of the arm, to the uterine contents, with the present and chances of future irritation caused by it.

"2. Entry of air into uterus.

"3. Liability to ruptured uterus, the pressure being opposite to that of the ordinary method.

"4. Much of the pain and distress felt in the ordinary plan.

"5. The necessity of baring the arm, and perhaps the removal of the coat of the operator.

"6. Much of the fatigue and distress felt by the operator by the pressure of the uterus during contractions.

"7. The increase of collapse by the pressure of the hand in cases of severe exhaustion.

"On the other hand we shall gain —

"1. Opportunity of correcting malpresentations as soon as recognised.

"2. The capability of early delivery.

"3. The opportunity of using the child as a compress in placenta prævia.

"4. The capability of version at a time when the old method is impracticable.

"5. The opportunity of producing cephalic version much more readily than formerly."

Dr. Hicks does not conceal that there are difficulties in this mode of version. He says:—

"1. The doubling up of the fœtus upon itself, as in the case of protracted transverse presentations and its varieties, especially when the arm has been in the vagina for a considerable time.

"If with this state we have a very active uterus, I think we have the most difficult conditions; for this form of turning, *as indeed for any mode*, much assistance is derived from chloroform; and I would say that those who have not had the opportunity of frequent practice would do best not to try the above plan, but, as I have before noticed, to depress the breech as much as is possible from the exterior, and then to introduce the hand as far as is required to reach the knee, which has generally been brought down by this effort at least half the distance towards the cervix.

"2. In the firm and active contraction of the uterus upon the fœtus.

"The merely close apposition of its walls to the fœtus does not of necessity prevent the gliding round of the child, though it adds more or less to the difficulty, and requires more care and patience. But where the uterus is contracting continuously round the child, as when it has been rendered irritable by long action, by fruitless attempts to turn by the hand within or by secale, then we shall find the difficulty very great, as will be the case under any plan. Our object will be then to remove or lessen that irritability by appropriate remedies, to effect which I have found no agent more satisfactory than chloroform inhaled to its full extent. Should it suspend uterine action for only a few minutes, in the majority of cases version may be effected without the hand in the uterus, except in the cases of arm presentation just alluded to." But he says that:—

"I feel certain that the adoption of the mode of version that I am advocating will do very much to diminish the occurrence of those two difficulties; the power of early turning will, by the vigilant practitioner, be made use of, and his cases will not be suffered to pass into the condition here mentioned. I would say, under favourable opportunities, arm presentation ought to be the rule.

"3. Difficulty to be contended with is the action of abdominal muscles and the contortions of restless patients. These can be generally overcome, he says, by appealing to the patient's reason; but if necessary, she may be placed under chloroform.

"4. Trouble in the exceeding flexibility of the child; this is seldom the case when the labour is at its full term, but will be found at the earlier periods, from the fifth to the seventh month, especially if the child be already dead, and still more if it be decomposing. However, this condition is not a real obstacle; a little patience and variation in the

direction of the external pressure will seldom fail to bring the knee within reach. But this condition is sometimes mixed with the fifth source of embarrassment, namely:—

“5. Excess of liquor amnii. This, again, scarcely ever will be troublesome at the full period, but will be more noticeable about the fifth or sixth month; the child then floats about so easily that it cannot be well seized, and if it is very flexible there may be some difficulty in hooking hold of the knees, or placing the head at the os. However, this trouble is easily disposed of by rupturing the membranes, and as they flow you can accomplish your desire.

“6. Obesity may hinder, but seldom can be a complete obstacle.”

Dr. Hicks, in conclusion, remarks that by operating in this way you will most probably succeed in fifteen or sixteen cases out of twenty.

This, indeed, is a large measure of success, and its more frequent employment by experienced hands will, I think, cause the profession to employ it more frequently; and here may I be permitted to quote an observation made by Dr. Barnes, who says:—

“I have found the bi-polar method a serviceable adjunct in every kind of labour in which it is necessary to change the position of the child. It is true that a rather free mobility of the fœtus in utero is most favourable to success; it is true that the external bi-polar method can hardly avail unless at least a moderate quantity of liquor amnii be still present; it is *true* that the internal and external bi-polar method requires in its special uses, if not the presence of liquor amnii, at any rate a uterus not yet closely contracted upon the fœtus. But I am in a position to state that amongst the nearly 200 cases of turning of which I have notes, there was scarcely one in which I did not turn the bi-polar principle to more or less advantage; and in not a few cases of extreme difficulty from spasmodic concentric contraction of the uterus upon the fœtus, with jamming of the shoulder into the pelvis; where other practitioners had been foiled, I have by the judicious application of the principle turned and delivered safely heretofore. Although I have performed podalic version very often for different complications—placental presentation, accidental hæmorrhage, pelvic narrowing, rupture of the uterus, convulsions, &c., &c.—yet it has been always by the old method—that is, by introducing the entire hand, and in general part of the forearm into the uterus; and I believe that this is the mode of practice still pursued by our most eminent obstetricians here.”

I cannot find in the reports of this Society any case in which this bi-polar method has been tried in our lying-in hospitals, although Dr. Johnston, in his highly valuable Reports for the past three years has detailed the particulars of forty-two cases in which version was performed in the Rotunda Hospital. It is to be presumed that it was by the old method, as no special mention is made of the precise mode of operation. In Dr.

Churchill's highly interesting communication to this Society, in which he gave, in the most candid manner, his private-practice results, he mentions having performed version seven times, and having been in consultation in sixteen cases. No doubt many, if not most, of the cases occurred before the era of bi-polar version, so that it could not be tried; but mention is not made of the manner in which it was done, so that it is presumable that the old intra-uterine method was employed.

I cannot call to mind any cases in which it has been tried here, although perhaps some of the members may have done so, instead of performing it by the old method. Two of the chief distinguishing advantages of this bi-polar mode are the facility with which it is performed, and the comparative freedom from danger which attends it. Every person who has found it necessary to introduce the entire hand and arm through the cervix, and into the uterus, must remember the great difficulty which is on most occasions experienced in effecting the operation. In many cases where women have had children before, and where the tissues are softened and easily dilated, or where this softening process has been the result of hæmorrhage, as in cases of placenta prævia or accidental hæmorrhage, the difficulty is not great, nor perhaps does it exist at all; but in the majority of cases requiring version this difficulty of introducing the entire hand is often great, and, as many of us know, often insurmountable. The introduction of chloroform into obstetric practice and its exhibition in those cases has, no doubt, modified to a considerable extent this difficulty, but it has not removed it completely, and many of us may remember cases in which, although the patient was fully under the influence of chloroform, the operator was compelled from the violent and persistent uterine action—which, we must remember, is not arrested, but only modified by chloroform—to desist from further attempts at version. But even supposing that the operator does succeed in effecting version by the old method, the subsequent dangers are to be apprehended. This is a matter so well known that version has been always regarded as one of the most serious operations to the mother, and the statistics upon this subject reveal to us a very large mortality indeed.

Now, if it be possible in many cases requiring version to substitute a comparatively easy operation for one that is difficult—one comparatively free from danger for one that is attended with a very high mortality, I think that the Society will agree with me, that a great point has been gained indeed, and I can bear testimony, as far as this single case will warrant me in doing so, to the ease and freedom from danger which attended this operation. One of the circumstances which astonished myself was the case with which two fingers, placed upon the foetal head, and the other hand on the opposite extremity of the pole, caused it to move, and I felt that it was quite possible, had I so desired it, to cause the foetus to make a perfect revolution in utero.

Of course, it may be said that the case which I have detailed to the Society was a favourable one for its trial. Well, no doubt this is true; the foetus was small—a seven and a-half months, or thereabouts. Some of the liquor amnii remained in utero, although it is a certain fact that an excess of liquor amnii is ranked amongst the difficulties of the operation, inasmuch as it renders the foetus too movable. It was her second child, and she was placed in circumstances where chloroform was exhibited without danger. Granted all this, still, even under less favourable circumstances, I am certain that this mode has great advantages over the one hitherto practised, and of this any person can satisfy himself by reading the cases in which it has been performed by my friend Dr. Braxton-Hicks. Those comprehend arm presentations, back presentations, accidental hæmorrhage, placental implantation, convulsions, coarctation of pelvic brim, cephalic changed to podalic, funis presentation, shoulder presentation. The twenty cases in which trial was made by him up to the period of his essay include a wide and extensive range of obstetrical practice indeed, and the success which attended his trial of it in this large group of cases is decidedly encouraging and satisfactory, and will, I hope, lead in this city, both in private practice and in public, and particularly in that great institution in which such abundant opportunity exists of trying it on an extensive scale, to its more frequent employment. There are cases, no doubt, in which this mode is not feasible at all, and those are pointed out by both Dr. Hicks and Dr. Barnes in their admirable essays upon this operation—cases, for instance, in which the shoulders and arms of the child are jammed down into the pelvis, and in which it is impossible to make any impression upon the head; but in many of those cases the complete introduction of the hand is still more difficult—in fact, sometimes impossible—so that if we fail in one instance, we equally fail in the second; and in those cases which every experienced practitioner here recognises at once, it would be very often attended by the most fearful consequences to continue our attempts to turn the child by the old method, and we are often compelled to perform decapitation or evisceration. But still cases will occur where the complete introduction of the hand is necessary, and both of these advocates for the bi-polar version acknowledge the necessity and importance of the old method, and candidly admit, as I have stated, that it is one of those operations which is sometimes necessary and indispensable, and they do not in any way recommend the complete abandonment of the old method.

The subject of pelvic narrowing and the treatment applicable in such cases is one of very great importance, and one of the most interesting papers upon the subject has been contributed by my friend, Dr. McClintock. I refer to the memoir published by him in the fourth volume of the “*London Obstetrical Transactions*.” In this he has given a table of cases in which version was performed during his mastership of the

Rotunda Hospital. The cases were 17, and the result was—9 live, 8 dead children. All the mothers recovered, with the exception of one, who died of puerperal fever. Those results are very satisfactory, and I think amply warrant us in having recourse more frequently to this operation than we do, in cases where we are aware, from the observation of the course of the previous labour, or labours, that it will be impossible for the woman to have a living child at the full term of pregnancy. My friend, Dr. McClintock, does not think, if I am to judge that such is his opinion from the observations which he has published in his memoir, that much is gained in the substitution of the feet for the head in cases of pelvic disproportion, except where this disproportion is slight. Yet his own tables prove that an increased chance of saving foetal life is afforded by the substitution of the feet for the head in my opinion, and he admits this proposition. Thus, for instance, of the 47 children delivered by other modes than turning, only 38 per cent. were born alive, whilst of the children delivered by turning, the proportion was 53 per cent.

I would not like in a short paper, such as the present, to enter upon the *questio vexata*, as to what is the best course to be pursued in cases where narrowing, or disproportion, exists. This subject has been, and is still *sub judice*, but all, I think, will agree with me, that we are indebted to Sir J. Simpson for having brought his wonderful genius, his untiring energy, his great skill in handling statistics and bringing them to bear in such a facile and lucid manner upon this point—viz., as to the comparative ease with which he can *drag* through a contracted pelvis, narrowed to such an extent that we cannot expect a living child to pass with the vertex first, a child which has been turned, and made by this plan to present feet foremost.

In my opinion, this is a great advance in obstetrical science, and I think that, although we are indebted to Sir F. Owen, in the first instance, for remarking upon the advantages which this altered position gives the operator, yet it is to Sir James Simpson that we are indebted for thoroughly working out the problem; and had he been aware of the advantages afforded by what, in my humble judgment, may be considered two of the most recent additions to the store of our obstetrical knowledge—viz., the mode of dilatation of the cervix, as proposed by Dr. Barnes, which thus, as it were, quickly and safely removes all obstacles to the entering of the hand into the uterus; and secondly, the easy manipulation of its contents, when entered by the bi-polar method of turning, as practised by Dr. Hicks, although, it is true, this method had been foreshadowed by others; amongst the rest, by Collins, of Dublin, who in some cases recommended the shortening of labour by pushing the child, with the finger placed within the os uteri; and by Lee, of London, who was satisfied by what he calls two-finger turning, or merely introducing two fingers into the os uteri; and then by Vigana, Stoltz, Martin,

not to mention several others, in Germany, who were the first to recommend *external version*, or, in other words, such a manipulation of the fœtus, through the abdominal parietes and uterus, as made the fœtus change its position according as the operator wished it; he, Sir J. Simpson, would, I have no doubt, have given in his adherence to this plan, and hailed it as one of the greatest advances in obstetrical surgery.

DR. KIDD.—There are a great many points in this paper worthy of discussion. The difficulty is that we are embarrassed with our riches. It is almost a pity that Dr. Byrne did not read two papers for us instead of one, for he had ample materials for doing so. I saw the woman referred to along with him in her first labour, and assisted him in delivering her. No forceps could have delivered that woman safely of a living child. It was a straight forceps which we used, and it cannot be said that the forceps failed in this instance, for it never slipped; but the narrowness of the pelvis rendered delivery impossible by that means. I saw this woman also in her second pregnancy, and I measured the pelvis very carefully then, and, as Dr. Byrne had previously done, I strongly recommended that we should have labour induced when she was seven months pregnant. I did not, however, see her during that operation. As to the manner of inducing premature labour in these cases, I have on several occasions tried Dr. Barnes's method with the elastic bags; and I believe that where it is necessary to complete the labour within a defined time—as, for instance, in a case of convulsions or hæmorrhage, or where there are any other circumstances in the case requiring prompt delivery—Barnes's bags afford us the most effectual means of inducing labour. But in a case where there is no pressing necessity for prompt delivery, where a few hours delay will make no difference either to the mother or the child, I believe that an older method is safer both for the mother and the child, and more efficacious than Barnes's bags. In the Coombe Hospital we always adopt in cases of narrow pelvis the plan of introducing a catheter between the membranes and the wall of the uterus and leaving it there. A gum-elastic catheter introduced some six or seven inches, and left there, will cause labour to set in within twenty-four hours, and after it has been induced, the labour will proceed naturally, and if it be done carefully, the membranes are unbroken. I believe you imitate natural labour more effectually than with Barnes's bags, and that it is safer both for mother and child. Therefore, I do not quite concur with Dr. Byrne in his panegyric on Barnes's bags for the purpose of inducing labour. With regard to bi-manual version and the comparative merits of version, and the forceps, in cases of contracted pelvis, I must say that my experience is altogether in favour of the forceps—that where the head will come down so as to be within reach of the forceps, I believe that you will

deliver the woman more safely, both for herself and for the child, by means of that instrument, than you will by any form of version. There are cases where the head lies so very high, and does not enter the pelvis at all—especially where you use Barnes's bags—that you will not be able to apply the forceps effectually, and then version will be better. But in all of those cases that I have seen, especially where Barnes's bags have been used, there is, even after you have turned the child, great difficulty in extracting the head. If the dilatation of the uterus is not perfect, the os uteri will grasp the neck of the child, and there is then great difficulty in getting the head through. I have seen that occur on more occasions than one, and that is one reason why I give the preference to the forceps in these cases. If you adopt the plan of introducing the catheter, and allow the uterus to dilate gradually from above downwards, and not from below upwards—which is the case when Barnes's bags are used—this objection does not apply so fully; but even in Dr. Byrne's case, he tells us that the lower part of the cervix was fully dilated, and the upper part not so, so that it exemplifies one of the results that is attendant on the use of Barnes's bags and version in these cases. I do not think the Dublin school is open to Dr. Byrne's rebuke of neglecting the method of bi-manual version. I am sure he is quite correct in saying that no case has been brought forward here, but in our hospital we have tried it on many occasions. Dr. Byrne advocates using the left hand for version, when the bi-polar method is adopted. My impression is that it is easier in these cases to use the right hand. You require to place one hand in the uterus or vagina, and the other over the surface of the abdomen. Now, if you introduce the left hand into the vagina, and the woman is lying in the obstetric position, unless you pass your right hand up between her thighs, I do not know how you can get your hand on the abdomen so as to make pressure on the breech of the child. If, however, you put the right hand into the vagina, you can then pass the left hand over the woman's side and get it easily on the abdomen, and, in my opinion, you will thus get better command of the child. That is a point I alluded to a great many years ago in the pages of the *Dublin Quarterly Journal of Medical Science*, when Braxton Hicks' paper was first published. I am glad to hear Dr. Byrne speak of this operation as being foreshadowed by Collins and Lee. I have always entertained that opinion. Dr. Collins gives a case in which, by introducing one or two fingers into the uterus (and I look upon it as a very important point to avoid the introduction of the whole hand), he had been able to turn the child. The case Dr. Byrne has brought forward is a most instructive one. The very fact of being able to deliver a woman of a living child in her second pregnancy, when all our efforts to deliver an unmutilated child in her first pregnancy failed, is very interesting and important.

DR. BYRNE.—May I ask what was the measurement you made of the pelvis on the second occasion?

DR. KIDD.—My impression is that it was considerably under three inches in the antero-posterior diameter. I measured with my fingers, as I always do.

The PRESIDENT.—There is one point of Dr. Byrne's practice which he will excuse me in commenting upon, for the subject is one of great importance. It appears to me that he relied entirely on the bags for effecting dilatation of the cervix, and did not give any time for nature to assist him. The third bag was in two hours, and immediately after its withdrawal or expulsion, he proceeded to turn. As Dr. Kidd remarked, that might be necessary where the case was urgent, as, for instance, in a case of hæmorrhage or convulsions; but here was a case where there was no urgency, where a few hours—or even days—would have made no difference. Might it not have been a better and a safer practice, after the withdrawal of the second bag, to give time to see whether nature would have dilated the uterus further without having recourse to the third, and even if the third were used, to have given some further time after its withdrawal before the hand was introduced? I have used the bags myself, and used no other means of dilatation, but that was in cases of very great urgency. I think the difficulty of turning might have been lessened if some time had been allowed to elapse between the removal of the bags and the attempt at version. As to Dr. Byrne's strictures on the Dublin obstetric practitioners for not adopting the bi-polar method, he should remember that cases in which version becomes necessary are not numerous. The cases in which I have performed version were forced on me suddenly; they became urgent, and it was not prudent to use the bi-polar method; for instance, in a case of hæmorrhage or prolapse of the funis, where it became necessary to act promptly, we should not adopt a method which would entail a loss of time. I can assure Dr. Byrne bi-polar version is practised by Dublin obstetricians. I met Dr Kidd recently in a case in which he had altered the position of the head by the bi-polar method before my arrival.

DR. THOMAS MORE MADDEN said, as he was present at the operation, he wished to bear testimony to the great skill with which Dr. Byrne had treated a very difficult case. The pelvis was the smallest through which he had ever seen a living child delivered. He had endeavoured to introduce his hand, but could not do so, and in that case the bi-polar method answered admirably. He was strongly of opinion that the bi-polar method was only applicable in a limited number of cases. No advantage was gained in bringing down the feet of the child until the os

uteri was dilated. The child could not be delivered until the os uteri was dilated, and the adoption of the bi-polar method was a round-about way of doing that which could be more quickly effected by the older method. He thought the bi-polar method was one of the fashions of the day which would hold its own for a time, but that it had nothing to recommend it except in such cases as that described by Dr. Byrne. He had seen Barnes's bags tried very often. They were introduced exceedingly well into the uterus by Dr. Byrne, but in that, as in other cases which he had seen, as soon as the bag was in the uterus, the Indian rubber got softened, and in endeavouring to push it up the sound passed through it. He had seen this happen, not only in his own hands, but with obstetricians of greater skill and experience than himself. In this particular case the bags proved exceedingly useful, but their introduction took a great deal of time, and involved very much trouble.

DR. CRANNY.—Drs. Byrne and Madden have both alluded to the sound passing through the pocket of the bag. Now, I have introduced the bags frequently in the Rotunda Hospital, and I never experienced the difficulty referred to. I always employ the speculum forceps, doubling up the bag and catching it in the forceps, and in that way you have great control over the bag, and you do not injure it.

DR. JOHN A. BYRNE, in reply, said that he had brought forward this case certainly as an isolated one. He did not proceed to the operation until, on passing his hand into the uterus, he found that he could effect the turning of the child easily by the bi-manual method. He quite agreed with Dr. Kidd as to the importance of fully dilating the uterus. In this case the os uteri was dilated at the lower part; the canal of the cervix appeared to be one and a-half inches in length, but while the lower part was dilated the upper part was undilated, and it must be remembered that he had drawn special attention to that point in his paper. Dr. Kidd had said that other methods of inducing labour had an advantage over Barnes's bags where they had time to consider what operation they would perform. The only other plans he had adopted were Kiwisch's and Dr. Sinclair's plans; he meant by the latter the alternate douche of hot and cold water. In induction of labour by this means it always came on at very uncertain times, but those plans, no doubt, had always been quite effectual, and he himself had never known them to be attended with any bad result. He had only used Barnes's bags two or three times, but he thought they had advantages over the other methods, and he, moreover, thought that the effect of them was to imitate very closely the natural process of dilatation of the cervix. When natural labour took place the cervix was expanded by the pressure downwards of the membranes containing the liquor amnii, and he considered that Barnes's bag was a kind

of artificial amnial sac dilating the cervix. It was very possible that if he had waited a little longer a more extensive process of expansion of the cervix would have taken place, but what made him hasten the operation was the rupture of the membranes, and the escape of the liquor amnii, and he, at the time, considered, that under those circumstances the sooner he accomplished the delivery of the patient the better. One thing in this case which struck him very forcibly was, that the upper portion of the cervix when dilated was very rigid and hard, and, as Dr. Kidd said, in extracting the head serious difficulty is often experienced on this account. If the bags had performed their function properly, there would have been less difficulty in drawing the foetal head through the cervix. Dr. Kidd said he preferred to use the right hand in turning, but he (Dr. Byrne) thought that if they looked at the position of the foetus in utero, as shown in the drawings which he exhibited, they would see that the left hand could be more conveniently used, and for his part he had found no difficulty whatever in passing his right hand between the thighs of the patient, the nurse separating them with a pillow. With regard to Dr. Kidd's remarks, he could assure him that he had not the slightest intention of making an attack on Dublin obstetricians, and he was glad that his paper had elicited the fact that this operation had been performed in the Coombe Hospital. His object was merely to draw the attention of the gentlemen who had charge of those hospitals to the fact, that the operation was extremely easy, and that such eminent practitioners as Dr. Barnes and Dr. Braxton Hicks had adopted it in a great variety of cases—in placenta prævia, convulsions, hæmorrhage, &c.—and that it had been attended in those cases with great success. He was astonished at the ease with which he was able by this method to move the foetus about, and he was sure that if they tried the combined method of version of Dr. Hicks, whenever a suitable case arose, they would find the operation very easy.

DR. MORE MADDEN read a paper, entitled *Observations on the History and Uses of the Short Straight Forceps as a Tractor, and the Long Double Curved Forceps as a Compressor and Lever*. Some remarks were made by the President and other members, but in consequence of the lateness of the hour (11 o'clock), and the importance of the subject, it was resolved, on the motion of Dr. Cranny, seconded by Dr. Byrne, that the discussion on the paper should be postponed until next Session.

[DR. MORE MADDEN's paper will appear in the next number of this Journal.]

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ROBERT M'DONNELL, M.D.

Secretary—E. H. BENNETT, M.D.

Amyloid Disease of the Liver.—DR. HAYDEN said: The specimen I now exhibit is an example of amyloid disease of the liver. The subject of it was a man aged twenty-six, a pipe-maker by trade, and of temperate habits, who was admitted into hospital on the 6th of this month. He was then deeply jaundiced, his face and whole body being of a deep lemon tint. The history I obtained of his illness was the following:—He had enjoyed good health up to ten months previously; never had syphilis, caries, or chronic purulent discharge. After exposure to wet and cold, ten months previously, he felt very unwell, and two months later he became slightly jaundiced. At the date of admittance he exhibited jaundice of a very decided character, as already stated. The liver was then manifestly enlarged. He had been subject to occasional attacks of diarrhoea, and this whilst he was in the hospital was the most troublesome symptom. On the 12th, having been out of bed every day previously, he was attacked with pain in the right side, and on the following day all the signs of pleuro-pneumonia were established. The lung was solid from base to apex. The urine was deeply stained with bile pigment; its specific gravity was 1010, and it contained a great deal of albumen. He died in the course of a few days. The liver was found to be greatly enlarged; it exhibits the amyloid change; there is a great deal of pigment of a deep green tint dispersed through it. The kidneys are in a similar condition, and considerably enlarged. The right lung is very voluminous, and both lobes are perfectly solid; it is in the third stage of pneumonia. The case affords a notable exception to the doctrine propounded by Dr. Dickinson, that amyloid disease of the liver is always associated with chronic purulent discharge, or disease of the bones.—*February 27, 1875.*

Necrosis of the Tibia and Fibula.—PROFESSOR STOKES said: I laid before the Society a short time ago a specimen of necrosis of the shaft of the humerus that had a traumatic origin. On the present occasion I lay before the Society a specimen of the same disease, not less interesting in a clinical and a pathological aspect. There was no evidence of the ordinary etiological conditions that usually induce the disease. The patient was a young man, aged twenty-five years, very tall in stature,

being six feet four inches in height, had a fresh complexion, dark hair, and blue eyes. He said that when he was nine years of age, one night, while lying in bed, he was seized suddenly with a violent pain, which he referred to the tubercle of the head of the tibia, followed by great pain, and a swelling formed, which subsequently opened, and through the opening a discharge of thin sanious matter, with an offensive odour, issued. It continued discharging for upwards of a year, and then several small pieces of bone came through the opening. After the removal of these spicula of bone, the patient got well, and for thirteen years continued perfectly well and able to follow and enjoy all the out-of-door exercises peculiar to youth and early manhood. About a year and a half previous to his admission to hospital he was seized again, for the second time (without any cause that he could assign, for he was not exposed to wet or cold, and had not sustained any injury), with symptoms similar to those he had experienced at his first attack, with this difference, that more matter now existed than before. The leg became enormously swollen, the limb of a livid colour, and the pain was agonising. Shortly afterwards several openings appeared on every aspect of the leg, through which purulent matter exuded. After some time the knee became affected, accompanied with a great aggravation of all the symptoms, and this was followed by a displacement outwards of both bones of the leg. He was then sent up to hospital, and admitted under my care in last November. It was quite clear that it was hopeless to expect to save the limb, but such was the debilitated condition of the patient that for some days I hesitated to recommend any operation. His pulse was quick and very weak. He had a bright hectic flush, profuse night sweats, and was reduced to a very low degree, but there were no physical signs of any pulmonary lesion. After some days he got better of these symptoms, and I recommended amputation, which was then performed. It is a very remarkable example of necrosis of almost the entire shaft of the tibia, and also commencing in the fibula; and there is also this remarkable peculiarity, contrasting with the case which I previously exhibited—the line of the epiphysis in that case limits the disease, whereas in this case the necrosis goes so far as to involve the upper part of the bone, which was followed by complete disorganisation of all the ligaments and cartilages of the knee-joint. The specimen shows well the specific feature of necrosis—the great hypertrophy of the bone, the complete obliteration of the medullary canal, the enormous number of sinuses, some of them being of very large size, and at the upper portion completely perforating the bone. Looking at the clinical facts—the two attacks of acute necrosis, without any assignable cause, the enormous amount of disease that existed, and that it had passed above the line of the epiphysis, displacing the bone outwards—I think the case is one of very great interest. I have never seen a case that presents

better the peculiar morbid phenomena characteristic of this disease.—
March 6, 1875.

Mycosis Intestinalis.—DR. GERALD YEO showed the intestines and mesentery of a man, aged forty-two years, who had died after suffering for six days from rather unusual symptoms.

On the 27th February he came to the dispensary attached to the Whitworth Hospital, and said he had a severe shivering the day before, and then suffered from headache and loss of appetite; his tongue was slightly furred; pulse 85; a small pustule was observed on the left cheek, but as he seemed to make light of it, it did not receive further attention. Under the supposition that he was about to get some febrile affection, he was given a diaphoretic, and told to come next day. When he presented himself on the 28th all his symptoms were much aggravated; tongue dry and furred; pulse 80, weak; he staggered as he walked, and complained of great weakness. He had constantly attended upon horses, but had no further sign of glanders. His skin had a peculiar yellowish tint. His eyes were dull and heavy. The pustule was larger, its red margin wider, and the entire cheek was glistening and tense, and the œdema extended down the same side of the neck. The mucous membrane inside the cheek was healthy. He refused to come into hospital. On the 1st March he returned in a very weak state and suffering from intense dyspnœa; he was now hardly able to stand, and his intellect seemed considerably impaired. The pustule had increased still more in size, and its centre was occupied with a greyish slough, while the margin was of a lurid red colour, and but little raised above the swollen cheek. The œdema now extended down the neck to the thorax, so that the throat looked twice its natural size. The entire chest was perfectly resonant on percussion, and no abnormal sound could be heard, except a loud tracheal râle; the mucous membrane about the fauces was very œdematous. He now consented to come into hospital, and was recommended to the surgical department, as the dyspnœa seemed to threaten the necessity of operative interference. He failed to obtain admission then, as the case was considered to have the aspect of a thoracic tumour, and was therefore sent to the Whitworth, where he was at once admitted. In the evening the dyspnœa became so intense that the resident pupil was obliged to scarify the mucous membrane of the fauces and pharynx, after which operation he passed a comparatively easy night. On the 2nd March his bowels, which had not been moved for some days, were well opened by medicine, and he expressed himself much improved. The œdema of the face was not so tense, but the greater part of the thorax was puffy; temperature 101·5°; pulse 90. He remained much in this condition, complaining of no pain or distress since the dyspnœa had been relieved, until the evening of the 3rd, when

he suddenly commenced vomiting. He continued to vomit incessantly a fluid which the nurse compared to "rotten eggs beaten up." On the 4th, having vomited all night, he complained of sudden and intense pain at the umbilicus. On the morning of the 5th he appeared better; the œdema had almost left the body; was quite gone from the face, which now looked strikingly emaciated; the pustule did not increase in size, and looked like an ordinary unhealthy sloughy ulcer, with a deep red margin. At 12 o'clock he became very pale, and said he was weak; the pulse could no longer be felt at the wrist; the heart-beat was exceedingly rapid, and so weak that it could not be counted. In the afternoon, after an exciting discussion with his wife, he died rather unexpectedly.

Autopsy.—When the abdominal cavity was opened it was found to contain about three quarts of opaque reddish-brown fluid, in which floated some soft gelatinous black blood-clots. The peritoneum was healthy throughout, and preserved its natural glance. When the fluid was removed, the mesentery was found to consist of a blackish-red tuberos mass, about one and a half or two inches thick. At first sight this looked like a great mass of hæmorrhagic sarcoma; however, it was found to be simple extravasation of blood between the layer of the mesentery, and more especially into the glands, which stood out as large, smooth, rounded black bosses, and, on section, showed a prominent dull surface, exuding a deep blackish-red fluid. They broke down with but a small amount of pressure. The stomach showed a most singularly well-marked hour-glass contraction at its centre, which divided it into two large pouches of nearly equal size. The duodenum and upper part of the jejunum were enormously distended, and the rest of the intestine contracted in a most singular way, so that the entire colon is reduced to the diameter of a man's little finger. Here and there were a few bag-like pouches, which could about hold a walnut; the lowest of these was at the end of the ileum. The stomach and intestines were filled with a yellow fluid, which is similar to that which the patient vomited. On the mucous membrane of the stomach were about five or six flattened prominent dark nodules, with a dull greyish centre; the greater number of these were situated near the pyloric orifice. The entire of the wall of the duodenum and part of the jejunum were greatly thickened by œdema, which gave the mucous membrane a semi-transparent gelatinous look. Here and there the membrane was studded with dark nodules, like those in the stomach, varying in size from a split pea to a bean. The centre of some of these appeared to be a slough, which was faintly stained by the bile. These nodules were thickly scattered along the jejunum, but were wanting in the ileum, except in those parts of the gut where it was distended like a bag. The spleen was somewhat enlarged, being nearly twice its normal size; it was friable and soft, but did not differ in any

remarkable way from the normal appearance; kidneys congested; the other abdominal viscera healthy; heart normal; lungs slightly emphysematous.

The microscopic examination of the fluid contained in the intestines showed it to be composed of immense quantities of epithelium cells in various stages of disintegration—some in masses clustered together, some broken up, and many single. Besides these cells, the fluid contained an enormous amount of bacteria, the majority of which were performing the most rapid movements. Many forms were seen, but the great mass was made up of short rods or chains, composed of 3–6 joints. Sections of the wall of the intestine in the neighbourhood of the nodules above described showed that the tissue was thickly beset with large masses of bacteria, packed tightly in the lymph spaces, or forming in one place a tense plug in a small vessel. None were found in the capillaries, nor could any embolic impactions be discovered in the mesenteric glands, though large masses were scattered through the tissue of the mesentery itself. No bacteria could be found in the secretion or slough of the pustule on the cheek either during life or after death. Owing to its position, a very searching examination of the neighbouring parts could not be made after death.

Dr. Yeo considered the case interesting, as being an example of a disease which was fortunately not frequent in this country, but which had received the attention of many Continental writers, who had given it the name *Mycosis Intestinalis*, and who believe that the affection commonly known as *charbon*, or malignant pustule, is identical with it, the formation of an external pustule being not an invariable occurrence. When, as in this case, the characters of the pustule do not correspond with the generally received idea of a malignant pustule, the diagnosis becomes very difficult, as the symptoms vary much in recorded cases. Dr. Yeo hoped that on this account he would be forgiven if he had detailed the clinical history rather more fully than the objects of this Society would warrant. Having satisfied himself that it was not *can-
crum oris*, he at first thought, from the man's occupation, that it was glanders; however, he subsequently changed his opinion, and on the third day after his application to the dispensary, "malignant pustule" was written after his name in the registry. Diarrhoea, which appears to be the rule in these cases, was completely wanting, and the constipation was interesting in connexion with the unusually contracted state in which the greater part of the bowel was found, which might be explained by the part of the alimentary tract which had been attacked, as the end of the small and all the large intestines appeared quite free from anatomical change. From the microscopic examination of the fluids and tissues in this case, no doubt was left in Dr. Yeo's mind as to the bacteria being the essential agent in the production of the fatal

symptoms, and that in all probability their introduction into the bowels may be the cause of the disease commonly known as malignant pustule. The spleen was not so much enlarged as in the cases given by Wagner, nor were any bacteria discovered in its tissue. The production of the hæmorrhage into the glands, tissue of the mesentery, and even into the abdominal cavity, was unusual in quantity, and the explanation of its occurrence is not so easy. No plugging of the mesenteric vessels with bacteria could be found, and though numerous masses were seen in the glands, the route they took to arrive there could not be definitely traced.—*March 6, 1875.*

Syphilitic Disease of the Bone, &c.—DR. THOMSON said: These specimens were removed from the body of a man, aged forty-four, who died in the Richmond Hospital a fortnight ago. He had been admitted ten days previously, direct from another institution. He was found to be suffering from a very extensive ulcer in the frontal region, the edges being overhanging and ragged. In the centre was a large mass of bone perfectly necrosed. Towards the right side there was another ulcer communicating with the larger one, and from both a large quantity of horribly foetid pus was continually issuing. He was very dull, having been suffering recently from epileptic fits; but from what we could learn the history was as follows:—Eighteen years ago he contracted a small sore, and some months afterwards he suffered from an eruption with sore throat. The eruption was as if grains of coarse sand were spread over the body. When he had the primary sore he was treated with mercury; and, when the secondary symptoms appeared, he was also treated with mercury. Seven or eight years afterwards he got pains in the bones, especially in the legs, and then ulcers formed in front of the tibia. About four years ago he was attacked by pain in the frontal region; there was no swelling, but intense tenderness. This spot became greatly inflamed, and he then went into hospital, and from that time up to his death had been continually under treatment. Some months afterwards this red patch over the frontal bone broke down and never healed up; the ulcer spread and the bone was exposed. A smaller ulcer formed on the left parietal bone, near the posterior part. Under treatment it got well, and the scar is still visible. The day before his death he became suddenly convulsed. He said he had been suffering from fits since before Christmas, but he had not had any attack of the kind from that time till his admission to hospital. The fit he got on Friday passed off in a few minutes, but after midnight he had another, and this was succeeded by others almost without intermission. He became comatose, and died on the following day.

At the *post-mortem* examination we found that almost the whole of the frontal bone had been engaged in this process of destruction. The

necrosed portion is attached to the healthy parts by small osseous bridges. The extent is, in its longest diameter, four inches and a quarter, and from above downwards four inches. On opening the skull we had the greatest possible difficulty in separating the brain from the dura mater. There was considerable meningitis. The anterior superficial portions of both hemispheres of the brain were almost diffuent. On making a section through the brain nothing particular was discovered until we came to the anterior lobe of the right hemisphere. Here the knife struck against some firm substance, which was found to be about the size of a pea, and to be placed in the white matter near its junction with the grey. This induration was very plain to the rough examination with the naked eye, but my friend, Dr. Gerald Yeo, has been good enough to examine it, with the following result:—"The nodule in the brain shows under the microscope a great mass of debris in the centre, where no tissue elements are distinguishable. Immediately around this there is a dense zone, composed of altered connective tissue (neuroglia), with quantities of fat granules, and here and there a blood-vessel, with thickened wall, much distended with tightly-packed red blood corpuscles. There is but little evidence of any neoplasm, the thickened neuroglia giving the idea rather of retrograde metamorphosis after inflammatory proliferation, which the conditions of the blood-vessels would also resemble, as circumscribed cerebral abscesses are commonly surrounded with an area of such vascularity, particularly when they depend upon the obliteration of a vessel, as was probable in this case."

It is probable that this abscess was set up by inflammation travelling from the diseased bone, and attacking, in turn, the dura mater.

The tibiae have been the seat of long-standing disease. There are very distinct evidences of this. In each there is a cavity about an inch and a half long. In one case the cavity extends nearly through the whole thickness of the bone; in the other it is about three quarters of an inch deep. These openings corresponded to ulcers discharging unhealthy pus, and they have existed for the last eight or ten years.

There was great difficulty in extracting the lungs. They were adherent to the walls of the thorax. Upon the upper portion of the right lung were a number of bone-like patches, flat and thin, and of variable size, while there were some which corresponded to the outlines of the three or four superior ribs. A large number of osseous spiculæ passed into the substance of both lungs at their superior parts. The apex of each was thickly studded with hard black masses, varying from the bulk of a hazel nut to that of a walnut. Dr. Yeo has also examined these structures, and he reports:—"The indurated and tough parts of the lung show simply the character of chronic interstitial pneumonia—namely, great proliferation of the connective tissue, which encroaches on the alveoli, and thus obliterates many of them. In this structure there is a considerable

deposit of pigment. The bony spiculæ appear to owe their great hardness to the deposit of calcareous matter in the processes of indurated connective tissue."

During life we detected in the upper portion of the right testicle a hard mass about the size of a French bean. The left testicle was soft and atrophied. *Post mortem* I found the tubercle to be made up of calcareous matter, not in the substance of the testicle itself, but in the tunica albuginea. The glandular structure had disappeared. This testicle had been the subject of syphilitic inflammatory disease. The left one was perfectly flaccid, and only a very small portion of gland structure remained. A small calcareous mass was also found here, rather in the substance of the testicle. The patient stated that he had no sexual desire whatever.—*March 6, 1875.*

Ununited Fractures of the Leg.—DR. E. H. BENNETT, in presenting these specimens to the Society, said: The facts of the injury which caused these fractures and the subsequent history of the case were recorded by me on this day fortnight, when I laid on the table the urinary organs of the patient. It is sufficient to remind the Society of the essential points relating to the fractures. They were caused by a heavy weight—a ship's anchor—falling on and crushing the limb against the deck of the vessel. No efficient treatment was adopted from the time of the fracture until the patient's admission to Sir Patrick Dun's Hospital, a period of fifteen weeks. The limb was extremely wasted, and movement of the knee and ankle joints, though apparently free, was painful, as was any attempt to move the bones at the seats of fracture.

The wasting was so great that it was easy to feel the outlines of the fragments of the bones on all sides. The fracture of the tibia is nearly transverse, as the preparation shows, and being placed rather above the centre of the leg, as so often happens in such specimens, the upper fragment appears to have been that which has been most displaced. It has passed at its distal end outwards and backwards, so as to be in contact with the interosseous border of the fibula. The lower fragment projects then apparently in front of the upper. A small separate fragment of the inner surface was detached, and will require special notice presently. The fibula is broken in two places—first, close to the upper extremity, obliquely, the fracture passing from above downwards and forwards; secondly, immediately above the inferior tibio-fibular articulation. This last fracture is extremely comminuted, presenting features which, taken with the displacement of the upper fragment, bear strong testimony to the truth of the account given of the mode in which the fractures were produced.

The whole preparation shows at a glance that the tibia was smashed by a blow as the man lay on the deck on his right side. As the crushing

weight acted directly, it seems to have displaced the upper tibial fragment, so as to bring it in contact with the fibula, and the pressure still acting after the tibia broke, the fibula was broken above and where it rested at the outer ankle on the deck. The mass of the bone between these parts was displaced backwards. The lower end of the bone was crushed where it supported the chief part of the weight into several fragments, which remained separated as widely as the soft parts would permit them to be. In these characters the fractures present nothing exceptional, but we rarely see a specimen in which the details of an accident can be so clearly read as this.

I have stated that I attributed the failure of bony union in these fractures at the time of the patient's admission to the absence of any proper rest being provided by a suitable treatment of the limb. That such was a correct opinion is verified by the condition in which we find the union of the several fractures. On admission I could distinctly move all three, but their firm resistance to extension and to any large range of movement proved that the fragments were strongly connected by fibrous tissue.

A section through the tibial fracture exhibits a condition of union such as we would expect to see in a fracture of the bone about six or seven weeks after the injury, the only difference being, perhaps, a greater degree of vascularity of the parts, particularly of the compact tissue and medullary cavity of the tibia, than would be seen in such a specimen. The line of fracture of the compact tissue is in both fragments quite distinct and sharp, and is embedded in the new bony matter, without having as yet joined it, or contributed to its formation at all. The bony tissue in the callus is extremely vascular and open in its texture. The medullary cavities are closed almost completely, being chiefly kept open in places by the numerous vessels which pass through the soft callus. One piece of bone in this specimen presents a strong contrast to all the rest—namely, the small piece of compact bone which was chipped off the inner wall of the tibia. It contrasts by its whiteness with the vascular bone around, and at first sight appears hardly different from dead bone; it seems to have just barely lived and to have derived its support rather by contact than by vascular connection with the living and vascular bone around. The upper fracture of the fibula presents a vascularity and incomplete ossification similar to the tibial. The lower fibular fracture is, in great part, only united by fibrous tissue; as yet only a small bridge of bone is formed in the uniting callus, and that is extremely flexible. Such appearances, I think, are interesting, as they show that the greater part of the bone uniting these fractures has been developed but recently—in fact, only within the last seven or eight weeks of the patient's life.

One point remains to be described in this specimen—namely, the condition of the ankle-joint. It was not involved by any of the fractures,

nor had its articular surfaces suffered any displacement in consequence of them. I have noticed that it was sufficiently freely movable at the time of the patient's admission to hospital, and I may presume that it was liable to more or less constant movement from the date of the injury to that of the admission to hospital. The freedom of motion was apparently only hampered by the pain that any movements of the lower segment of the leg caused.

On opening the joint I found its cavity entirely occluded by a false membrane, very vascular, but having little power to resist any strain; it is nearly transparent, and it separates easily from the cartilage of either the tibia or astragalus. The vessels in it pass in fine loops, like those of the mesentery, parallel to the surface of the cartilage, and can be traced springing from the vascular synovial fringes at the border of the cartilage, particularly from the vascular body in the cleft, where the tibia and fibula meet in the joint. The cartilage of the astragalus opposite this, the thickest part of the membrane, is eroded on its surface, and also around the borders of the cartilages it is slightly eroded; but elsewhere, when the membrane is raised off gently, the cartilage presents its normal polish and colour.

In a former communication* which I made to this Society, I have described a membrane of precisely similar characters developed in the knee and ankle joints of a patient whose limb was maintained in splints, and consequently in disuse, for a period of two years. In this case a complete obliteration of the cavity of the ankle-joint was effected by a period of disuse of twenty-two weeks.

The importance of this and the previous case depends on the fact, that they serve to fix the time within which such effects of disuse may be developed in joints—knowledge which is most important to the practical surgeon. In a case of ununited fracture of the humerus of two years' standing, recently recorded by Dr. T. E. Little (*Irish Hospital Gazette*, Vol. II., page 215), similar changes have been observed, with the additional fact of the completion of the destruction of the elbow and carpal joints by ossification of the membranes developed in them. This form of ankylosis, from rest without inflammatory action of any kind in the joints, has been long recognised, and has been very fully described by J. Cloquet, but many of the details, particularly those of time, require to be determined, while the recent observations of Reyher and of Butlin would suggest that some important variations from the process here described may take place.—*March 13, 1875.*

Cirrhosis of the Liver; Bright's Disease; Renal Calculi, with Pyelitis.—DR. W. G. SMITH presented a specimen of cirrhosis of the liver, and gave the following account of the case:—On the 2nd of March, 1875,

* Pathological Transactions. Vol. IV., p. 109.

M. B., a stout, largely-made woman, aged forty-eight, of dark complexion, a nurse-tender by occupation, was admitted under my care into the Adelaide Hospital. At the time of her admission she was in a dull, stupid condition, and disinclined to answer questions, so that it was difficult to make out the previous history, but the chief points were elicited by Mr. Adams, as follows:—

For six or seven years her health had not been very good, and on several occasions she was troubled with slight swelling of the legs, face, and eyelids, which always subsided on lying down, and for the relief of which gin and some “powders” were from time to time prescribed. Her habits, as I learned from various sources, were always temperate, and she had not, within recent years, suffered from scarlatina or other acute illness. During the past year her general health declined, her appetite was lost, and strength became impaired. Two months ago she was seized with a heavy cold, the feet swelled, she had lumbar pains, passed a very small quantity of high-coloured urine, and became so ill that she was compelled to give up attending a case in Derry to which she had been summoned. At the same time irritability of the stomach set in, she vomited frequently, and the swelling gradually extended upwards to the abdomen, superior extremities, and face. The gastric disturbance subsided after two or three weeks, and she made some attempt to rally before she sought admission to hospital.

Condition on admission.—Extreme anasarca of the lower extremities and enormous distension of the abdomen with fluid, but there was no œdema of the face or upper extremities. She made no complaint of headache, wore a listless, heavy aspect, and did not exhibit the least appearance of jaundice. The skin and mouth were dry, and she passed only a few ounces *per diem* of turbid, dark red urine, specific gravity 1015, which was loaded with albumen, contained a little blood, and deposited a small sediment of pus. No tube casts were visible.

Next day the abdomen was tapped and 112 ounces of clear light-yellow fluid were drawn off, greatly to the relief of the patient. She lay in a quiet, almost lethargic condition, and, although seemingly very drowsy, could not sleep. The pulse was over 100, very weak, soft, and compressible, and no abnormal sound existed in connexion with the heart.

On the day following the prostration and stupor had increased, and on the 6th inst. she was much worse. The face was flushed, dusky, and hot, the respirations 48, abdominal, and stertorous, pulse 180, and temperature 101.7°. The œdema had now invaded the hands and arms, and on the upper part of the chest a few small, purple, subcutaneous ecchymoses were noticed. The pupils, although dilated, responded to light; stupor passed into profound coma, and she died quietly at 11 o'clock that night, four days after admission.

Post mortem examination fourteen hours after death. Body still quite warm; rigor mortis absent; subcutaneous fat very abundant.

There was intense purple lividity, not only of the posterior part of the trunk, but also of the face, neck, arms, and front of chest, and numerous purple ecchymotic spots about the neck, chest, and shoulders. On the inside of the thighs, and below the nates, were numerous vesicles and irregular bullæ. The three great cavities were examined.

Head.—A considerable quantity of dark blood escaped on removing the calvarium, and all the sinuses were gorged with blood. The brain substance was exceedingly soft, pitted on pressure, and the œdema of the cerebellum was such that no trace was left when the finger was pushed into it and withdrawn. On the convexity of the brain were numerous milky thickenings of the pia-arachnoid. There was no clot or effusion in the lateral ventricles.

Chest.—Lungs voluminous, intensely congested and œdematous, soft and friable. No pleural or pericardial effusion. The heart was small, very soft, contained no clots, and the valves were perfectly healthy.

Abdomen.—Contained a considerable quantity of clear, straw-coloured fluid; not a trace of peritonitis was found; the large intestine was enormously distended with flatus.

Spleen.—Slightly enlarged; weighed $9\frac{1}{2}$ ounces; interior very dark red.

Bladder.—Included a small quantity of pus; no trace of cystitis or of vesical calculus.

Right Kidney.—Weighed $6\frac{1}{2}$ ounces; was soft, flabby, and elongated. Projecting from the hilus was a sac about the size of a hen-egg, and in the upper part of the organ two round, hard nodules, like marbles, were felt. On section, the sac was seen to be the dilated pelvis, and was filled with turbid, bloody fluid. The mucous membrane was thickened, dull white, presented numerous arborescent patches of injection, and closely resembled one of the illustrations of pyelitis given in Plate XI. of Rayer's work. Communicating with the enlarged pelvis were numerous smaller loculi, leading to the calyces of the pyramids, and through pressure and absorption, the greater part of the proper renal tissue had disappeared. This multilocular sacculaton of the kidney was explained by the fact that the opening from the pelvis into the ureter was very narrow, but below this point the duct was of normal size. One of the calculi, which was removed, weighed 24 grains, and was found to be altogether phosphatic in composition—mainly triple phosphate.

Left Kidney.—Weighed 10 ounces; capsule thickened, peeled off readily; exterior smooth. The cut surface showed a high degree of congestion, blood dripped from it; the cortical portion was much enlarged, and the pyramids were a deep chocolate red; it was soft and very friable.

Liver.—Presented no adhesions to surrounding parts; it was much reduced in bulk, weighed 28 ounces, was uniformly nodulated, but preserved its symmetry of form, and, in fact, is an excellent example of pure uncomplicated cirrhosis. Capsule not much thickened; surface greyish-yellow; consistence firm and leathery; section disclosed polygonal yellow islets, separated by bluish-grey bands; not much fatty degeneration.—*March 13, 1875.*

Cerebral Abscess; Disease of Temporal Bone.—DR. NIXON presented the brain and a portion of the right temporal bone of a girl, aged fourteen, who had been admitted under his care into the Mater Misericordiae Hospital on the 8th February with typhus. On the 21st February there was tonsillitis; she grew deaf, and profuse otorrhoea set in. On March 6th the otorrhoea, which had nearly ceased, returned; she became feverish—like a person in the cold stage of ague—with, in addition, a rolling movement of the head. Her temperature was 103°, pulse 160, and respiration 60 and sighing. There was also vomiting of greenish matter. The patient, however, was conscious; there was no pain or stupor; but she emaciated rapidly, and an eruption of pemphigus appeared on her hands and feet. On March 10th a small discharge of blood took place from the right ear, her pupils rapidly dilated, and she died suddenly. *Autopsy*.—On opening the dura mater corresponding to the right temporal bone, about 3iss. of matter was discharged. There were two abscesses in this situation, one above the other, the upper one of which had burst into the cavity of the arachnoid. The roof of the tympanum was carious, and over the bone the dura mater was raised, and of a yellow colour. A third abscess, due no doubt to venous implication, was discovered in the anterior extremity of the opposite (left) hemisphere.—*March 13, 1875.*

Peritonitis; Perforation of the Bowels by a Swallowed Pin.—DR. FINNY said: The case, Sir, which I wish to bring before the notice of the Society is one of a very serious illness, brought on by a very simple cause. It is a case of peritonitis of a week's duration, due to ulceration of the vermiform appendix by a pin.

A young woman, aged twenty-seven, was admitted to the City of Dublin Hospital on 12th March, 1875, with all the symptoms of peritonitis. She had an anxious face; small, rapid pulse, temperature below par, 97·5°, and complained of intense pain and tenderness over the whole of the abdomen—principally in the region of the right iliac fossa and hypogastrium. She had, also, incessant vomiting of a greenish colour; nothing stayed on the stomach. She was very cold; there was obstinate constipation, and the urine was very scanty. No change for the better occurred; her intellect, however, was clear up to ten hours

before her death. She never had any symptoms referable to gastric ulcer; and, in reply to questioning, stated she was in good health up to four days prior to her admission to hospital, nor could she account for her illness. On the Saturday before she came to hospital she felt pain, after her tea, in the lower part of the abdomen, which got worse during the night. On the following day she took an aperient draught, which slightly acted on the bowels, but did not remove the pain. On Tuesday she took, by an apothecary's advice, another draught, and on Wednesday a third. This last she rejected; and from that time until her admission to hospital, she continued vomiting constantly, with no cessation of the abdominal pain. On the day following her admission she obtained relief from pain by the application of hot fomentations to the abdomen and the use of a grain of the watery extract of opium every third hour. Dulness existed over the lower and right part of the abdomen; but there were no friction sounds. Deep pressure did not apparently give her much pain. The rate of the pulse, which could not be taken at the wrist, on the Saturday, was 148, and on Sunday it was 160; and at 5 o'clock on Monday morning she died. A good deal of restlessness existed the evening before death, the patient turning from side to side. It is worth mentioning, that although respiration was entirely thoracic, the decubitus was by preference dorsal, with the legs stretched out, the position not attributed by writers to the disease. Close inquiries made after her death from her friends showed she was very much in the habit of putting pins in her mouth. The *post mortem* examination showed that the evidences of peritonitis were universal. The parietal layer of the serous membrane was deeply injected and cloudy, while the visceral layer was coated with yellow lymph, which in some places glued the intestines together, and sero-purulent matter flowed from the pelvis. The great omentum was glued to the front of the cæcum, where the inflammation seemed more active; and on raising carefully this portion of the intestine, a foreign body was seen protruding from the vermiform appendix. On striking this with a knife, a metallic sound was produced. On closer examination the narrow half of the body was seen protruding from the appendix. The whole of the intestine was of a deep black colour, and portion of the great omentum attached to it was in a semi-gangrenous condition. The parts were very soft, and easily torn. The foreign body proved to be a pin, which was enclosed in calcareous matter, the head projecting. The crust was analysed for me in the laboratory of Trinity College, Dublin, and proved to be composed of phosphate of lime. There was a small amount of carbonate of lime and of fatty and biliary matters. It resembled, when recent, a club, the head of the pin protruding and being the handle. The rest of the specimen has lost some of the characteristics of acute peritonitis, owing to being in spirits for some days; but

there are sufficient evidences of that disease remaining at the ileum and on the surface of the small intestine; and at the appendix, through which I have placed a small piece of stick, it shows that the part had been literally eaten into three pieces. The point of this foreign body made its way out at the junction of the proximate third with the outer two-thirds of the appendix, the whole being dark-coloured and friable. The case is of interest, as exemplifying—

1. The danger of a small foreign body, such as a pin, entering the intestinal canal, while very much larger substances have, it is well known, passed through the canal without any bad symptom.

2. The place of selection, so to speak, where foreign bodies lodge—viz., appendix vermiformis.

3. Nature's attempt to render the foreign body comparatively innocuous by encrusting the sharp-pointed end with phosphates and carbonates of calcium.

4. And this—to a practical physician of the most importance—the danger of not arresting, at once, by large doses of opium, frequently repeated, all peristaltic action, and the avoidance of anything like purgatives—a point much dwelt upon by Dr. Stokes—so that any breach on the surface of the bowel might, by physiological and mechanical rest, be repaired by adhesive lymph, and the foreign body, if such exist, may be shut into a cyst or fibrinous sac out of immediate danger.—*March 20, 1875.*

CLINICAL RECORDS.

MEATH HOSPITAL, DUBLIN.—*Notes from the Medical Wards.* By
ARTHUR WYNNE FOOT, M.D., Senior Physician; Fellow and Censor,
King and Queen's College of Physicians.

THE following case was one which offered some difficulty of diagnosis, and presented several points of clinical interest:—

A woman, between thirty and forty years of age, a domestic servant, hard-worked and badly-fed, was admitted into hospital 24th May, 1875, complaining of "a lump in her back." She looked to be much older than she stated, but this aged appearance might have been due to her worn and wasted condition, which was like that of a person exhausted by a chronic suppuration. She had a dark and sallow complexion, black hair, a scrofulous conformation of mouth and teeth, and had always been "bilious." She had not been in good health since the previous Christmas eve, when she caught a cold, which settled in the left side of her chest, and had commenced with pain in that part of her body. She kept her situation until five weeks before admission, at which time "a small kernel" appeared in the posterior part of the right lumbar region. The immediate cause of her applying at the hospital was her being very much frightened, because, three days before admission, she at night suddenly expectorated a "mugfull" of green and yellow matter, "corruption-like, as bitter as gall;" this did not recur at the time. She had a firm conviction that this expectoration was connected with "the lump," a conviction which was based upon certain bubbling and rumbling sounds felt at the time in the lumbar swelling. On examination of "the lump," a flattened prominence, tender and painful, was found projecting in the back part of the right lumbar region, immediately below the twelfth rib; the skin at one point over this swelling was very thin and red, the redness quickly returning when pressure was removed, and hereabouts fluctuation was evident, and an impulse on coughing perceptible; a hardness or flapping extended therefrom for some distance towards and beyond the crest of the right ilium. She felt increase of pain at the seat of fluctuation on coughing, and when doing so she instinctively pressed her hand against the tumour to support it. Over the last four ribs on the right side posteriorly there was dulness, absence of respiratory sound and of vocal fremitus; over the upper part of the back of the chest on this side respiration was harsh, and attended with a subcrepitant râle; the

expectoration was of the mixed frothy and muco-purulent character of a bronchitis of some standing; laterally and anteriorly the hepatic dulness was natural, and the respiratory signs as before mentioned. She had never received any injury in the back, the contour of the spinal column was normal, it was nowhere tender on strong percussion; she had no pain, except in the tumour; her easiest position was sitting up; her not being able to walk or stand much without fatigue, and which was the cause of her leaving her situation, was accounted for by her general debility. Constitutionally she presented a subfebrile condition, with an evening paroxysm of hectic; she complained of great and constant thirst; her tongue was remarkably red and raw-looking, except where it was patched with aphthæ.

In the clinical conferences over this case three views as to the source of the abscess pointing in the lumbar region were discussed—its connexion with diseased vertebræ, its being an hepatic abscess, and its being an empyema of necessity pointing in this situation. For and against each of these views there was something to be said, but the balance of evidence being in each case against the supposition advanced, left the decision in a state of uncertainty, only to be finally cleared up by the *post mortem* examination. The total absence of symptoms, as above-mentioned, referable to the spine—particularly her easiest position being an upright one, the age of the patient, the history of the case—made it very doubtful that the abscess was connected with diseased vertebræ, although it was not forgotten that the pointing of a psoas, or lumbar abscess may be the first announcement of long unsuspected vertebral disease. As to the second view—that of hepatic abscess—if the dulness in the right back of the chest was hepatic (as it proved to be), it indicated enlargement *upwards* of the liver, a condition almost confined to the cases of abscess and hydatid tumour; the absence of jaundice was more in favour of than against this view, but there were not, and had not been, any rigors, or cause for hepatic abscess. The bulging of the posterior portion of the right lobe of the liver and the sudden expectoration of a quantity of pus, “as bitter as gall,” were compatible with the escape of an hepatic abscess by the bronchial tubes, of which there had been a case some time before in the hospital. Most, and almost entirely against the hepatic abscess theory, was the position of the pointing tumour, as in Mr. Waring’s three hundred cases, showing the different modes of discharge; there is only one which “opened posteriorly, spontaneously through the ribs in the back.” The view of the tumour being an empyema of necessity was that which I was most inclined to adopt. She herself attributed her illness entirely to the severe cold she caught at Christmas; however, the pain she was then seized with was in the *left* side. With the exception of slight bulging of the lower part of the right back of the chest, there were no signs to distinguish the dulness in that

region from that produced by thickened remains of a purulent fluid, which had already partly escaped; the line of dulness was, moreover, almost a horizontal one; the sudden expectoration of pus was equally consistent with this view. There was not any assistance derived from change of position; this manœuvre, though theoretically a simple test in an unfilled thorax, and often of great use in recent cases, is not always practically useful in a debilitated and exhausted subject, and where time has allowed the formation of bands and meshes of exudation fibrine to make loculi, which most materially limit the movements of fluid, especially in the inferior regions of the chest. It may be as well here to state that the cause of this much-debated dulness in the back of the right chest proved to be a lardaceous liver of peculiar shape, like a wedge, the thin edge anteriorly, and of most unusual depth behind, projecting contrary to the general rule of solid enlargements of the liver *upwards*, so as to encroach on the right cavity of the thorax; this rendered the line of dulness almost horizontal. The usual range of true hepatic dulness in the right mammary, axillary, and dorsal lines being respectively the fifth, seventh, and ninth intercostal spaces, it was in this case as nearly as possible the fifth, sixth, and seventh. The view of the case to which, under the circumstances, I most inclined, that the tumour was an empyema of necessity about to point, and the idea that it had already attempted to find an exit by the air-passages, made me unwilling to favour a second and external opening, when I thought nature had already made one, and that an internal one; so, instead of puncturing or poulticing the fluctuating swelling in the lumbar region, I had an opium plaster applied over it, ordered her *ol. morrhue* ʒj. on warm milk every night; *ext. op. sulp. quin.* āā gr. j. in pill t. d., and for her cough *es. anisi* ʒss., *guttæ nigræ* ʒj., *eth-chlor.* ʒij., *aq. camph. ad* ʒviiij. s. ʒj. *quartis horis.* The opium plaster gave her great relief, she became able to sleep on the right side, which she had not been, and she ceased to suffer pain in the tumour on coughing. As she was unable to swallow pills, they had to be discontinued.

On the 26th May she expectorated some bright yellow purulent liquid, distinct from, but mixed with, the usual bronchitic sputa. She said the purulent expectoration came from the "lump," that she felt it do so. She complained very much of a "dirty taste" in her mouth, and attributed it to the "horrid spit." This was relieved greatly by the carbolic acid mixture of Dr. Alex. Keith—*Ac. carbol. ac. acetic.* āā ʒj. *eth. chlor. tr. opii.* āā ʒj. *aq. ad* ʒviiij. ʒss. *4tis horis.* For profuse nocturnal sweating she was given 20m. *tr. bellad.* at night, but this failed to check it; much more effectual was a pill of *ext. bellad. gr. j., ox. zinci grs. iv.*, which was broken up, and thus swallowed. Her thirst, which was constant, was much appeased by a mixture devised by the apothecary of the hospital, and which goes by his name, *Mistura Birketii*—

viz., crystals of citric acid ʒss., white sugar ʒiv., essence of lemons ʒss., water two pints. N.B.—The essence of lemons, which is a most necessary ingredient, is made by adding one part of the oil of lemons to seven of alcohol. She suffered off and on from diarrhœa, which was kept in check by a combination of chlorodyn. ʒj., mist. cretæ ʒvj.; a tablespoonful occasionally.

On 1st June the opium plaster over the lumbar swelling was raised, and the tumour was found to be much less prominent, the soft structures much more firm; and receiving no impulse on coughing; at this time there was dulness in the right back from the eighth rib downwards; her appetite was returning, and she felt in every way better; in the following week she became uncomfortable and uneasy, on account of the moderation of the diarrhœa by the astringent mixture, and the abdomen became inflated; she was under the impression—which was a correct one—that the diarrhœa had carried off “some matter from her side,” so it was allowed to take its course.

12th June.—I found her very much distressed, because, while I was absent for a few days, the tumour in the right lumbar region had given way, discharged more than a quart of matter, and was still running; when it first gave way the matter spouted from it on coughing, and did so still, bubbling in less quantity; the air came from within; it was ascertained that it did not enter the sinus during inspiration. The purulent expectoration ceased with the establishment of the discharge in the loin; and though her cough continued, she, for a time, almost lost the night perspirations and hectic fever; her appetite improved, and the dulness in the back of the chest diminished by two inches; the discharge was not offensive; matter bubbled out when she coughed or sat up. On the 18th June, during an attack of bilious vomiting, a considerable quantity of blood was expelled with force through the sinus.

25th June.—It was ascertained that on pressing the right side of the abdomen, air of a foetid kind escaped by the lumbar opening; this was sucked into the sinus by the relaxation of the abdominal muscles, as it could be prevented doing so by keeping the finger on the opening during inspiration. During the early part of July a large ischio-rectal abscess formed at the right side of the anus, which, when opened, gave exit to a pus so pre-eminently offensive as to sicken some of the most experienced hospital attendants; the cavity of this abscess closed completely without fistula. During the course of this month the discharge from the opening in the loin acquired a completely fæcal colour and odour, diarrhœa meanwhile persisting more or less. Notwithstanding her emaciated condition, and the difficulty of keeping her clean with a double fæcal outlet and diarrhœa, she did not get bed-sores. She died on the 7th August, having suffered for some time before death from most distressing and uncontrollable hiccup; she exhibited great tenacity of life, being at

least four days dying, lying cold, cadaverous, voiceless, pulseless, for the greater part of that length of time.

The emaciated corpse was examined twenty-five hours after death; it was observed that the right back in the dorsal line (vertical axis of scapula) was dull from the seventh intercostal space downwards; the lower ribs on that side protruded, but the intercostal spaces were not obliterated. In the back of the right lumbar region, just above the posterior superior spinous process of the crest of the ilium, were two irregular-shaped, livid apertures with undermined edges; probes introduced showed that these openings led to very devious passages, but were not connected with caries of the ilium or disease of the sacro-iliac articulation. Both feet were œdematous, especially the right, which was strongly inverted, indicative of something wrong with the psoas muscles, one of whose principal actions is to raise and evert the limb. The muscles of the anterior abdominal wall were of an olive-green colour, contrasting strongly with the light red of those covering the chest. On opening the thorax the pale lungs collapsed fully; there was no pleural fluid; fleecy adhesions about the lower portions of the lungs increased in number and density towards the bases, which were more or less adherent to the diaphragm. The right half of the chest was encroached upon by the upward pressure of an enlarged liver. On opening the abdominal cavity the most obvious pathological character was an intense development of peritoneal tuberculosis; the serous membrane, especially the visceral layer, was thickly sown with minute, uniform-sized, translucent, firm, grey, miliary granulations. The parts of the diaphragm contiguous to the liver and spleen were agglutinated to these viscera by a pasty amalgamation of the tubercular exanthem, produced by mutual friction. The peritoneal aspect of the bladder was especially rich in the tubercular development. The cæcum and ascending colon were inseparably fixed by posterior attachments; this portion of the intestinal canal was opened *in situ* by a free incision along its anterior wall; and upon the removal of its pasty, ochreous contents, apertures, three in number, and close to one another, were seen on the posterior wall of the ascending colon, between the cæcum and the place where the colon becomes related to the right kidney. These apertures, searched with a fine elastic catheter, passed in different directions, one upwards for four inches, parallel to the vertebral column; another inwards and backwards for about the same distance; and the third more directly backwards in the direction of the external openings, which were on the same level with the apertures in the colon; the catheter did not actually come out behind, as the track was sinuous, and no force was used. On tracing the vertical sinus it was found to pass upwards behind the right kidney into what had been the right psoas muscle, but which was represented by a greatly thickened sheath occupied by greyish-green pus. The sheath of

the muscle had contracted the densest adhesions to the back of the right kidney, involving the ureter as it descended on the front of the sheath, and so interfering with its duties as to have led to dilatation of the mucous cavity of the kidney; at the top of the psoas sheath a metal probe indistinctly grated on a very small portion of diseased bone, apparently connected with the last dorsal vertebra; the portion of the muscle below the cæcum, passing along the brim of the pelvis, was dark and ecchymosed, but retained its muscular structure. On removing the left kidney, whose posterior surface was unusually adherent, the subjacent sheath of the left psoas muscle gave way, giving exit to a quantity of pus. On slitting up the sheath it was found to contain no remnant of muscular tissue as far as the crural arch, but to be completely occupied with pus; the thickened sheath was lined with shaggy layers of greenish exudation fibrine. The left ureter was with difficulty isolated in its passage through the thick exudation on the front of the sheath; that it had been seriously obstructed was rendered evident by the dilatation of the infundibula and calyces of the left kidney, which was even more marked than upon the opposite side; the retained urine sprung with force from each kidney when they were divided. The liver was eminently lardaceous in character, large—weight, 5 lbs.—smooth, pale-brown, well defined in its outline, lobes, and fissures; its margins stiffly marked; on section dry, bloodless, glistening. Its enlargement principally affected the right lobe, which rose in a large hump of great thickness posteriorly, projecting upwards into the right side of the chest. The spleen, weighing $7\frac{1}{2}$ oz., was firm, purplish red, and of unusual size, considering the emaciated and anæmic condition of the body. The vertebral column, examined from within, was straight and smooth. Two vertical parallel sections were made along the bodies of the vertebræ without discovering anything more than a diffuse congestion of the cancellous tissue, probably due to the prolonged dorsal decubitus; there was no swelling, softening, suppuration, or tubercular deposit discovered. From the very limited degree of roughness detected with the probe at the upper extremity of each psoas sheath, it was inferred that the seat of caries involved the *transverse processes* of the last dorsal or first lumbar vertebra, which are the superior attachments of the psoas muscles.

The condition of things seems to have been a bilateral psoas abscess of very great latency, that of the right side communicating with the early stage of the ascending colon; fæcal matters escaping from the bowel making an abscess in the retro-peritoneal connective tissue, which ultimately pointed posteriorly in the lumbar region, discharging first part of the contents of the psoas abscess, and afterwards, when that had been exhausted and the fistula well established, the contents of the bowel. The infinitely larger collection of pus in the left psoas muscle was due to

its not having found a vent. The lardaceous liver was, as is well known, the probable result of the prolonged suppuration; the unusual configuration of its right lobe simulated pleural effusion. The explosion of peritoneal tuberculosis was doubtless the result of absorption of purulent matter, and in all probability a recent, if not the terminal pathological event of the case.

Notes from the Wards of the Cork Hospitals. Communicated by MR. MARTIN HOWARD.

NORTH INFIRMARY.—*Cases under the care of NATHANIEL J. HOBART, M.D., M.R.C.S.E., Surgeon to the Infirmary.*

CASE I.—*Case of Hip-joint Disease.*—George M., aged six, a puny, delicate-looking child, was admitted into the North Infirmary on Tuesday, 27th April, 1875, presenting well-marked symptoms of hip disease at the right side. There was great wasting of the limb, and real elongation, as determined by measurement from the anterior superior spinous process to the inner ankle of each leg, and the diseased side of the pelvis was much lower than the other. The flattening of the nates and the curvature of the spine were strikingly well defined. There was very great pain and tenderness on pressure, and the limb could not be moved in any one way without putting the patient to immense torture. The disease was of long standing, and was attributable to external violence. Extension, on the American principle—by means of pulleys—was had recourse to; but soon after admission gastric symptoms of a very severe nature set in, the pulse becoming quick, the tongue furred, vomiting constant, and the whole system being in a state of preternatural excitement. He died on the 21st of May.

The autopsy was exceedingly interesting. Matter was found in the cavity of the hip-joint. There was a bright red spot on the head of the thigh bone, corresponding to a similar red patch in the cavity of the acetabulum. The capsular ligament was slightly thickened and partly inflamed, and the ligamentum teres was completely destroyed, some fibres attached to the notch at the bottom of the acetabulum alone remaining, which was quite soft and easily torn away with a forceps. The cartilage lining the cotyloid cavity was also inflamed, one or two apertures existing, through which a probe might be passed. The head of the femur was spongy in character, and offered little resistance to the scalpel.

It is not often an opportunity presents itself of examining hip-joint disease in the stage above described, and the examination is of importance as verifying the statement that this disease primarily affects the cartilages, ligaments, and bones, and not, as De Haen and others would lead us to believe, the surrounding soft parts.

CASE II.—*Case of Dislocation of the Femur on the Dorsum Ilii; Reduced, under Chloroform, by Manipulation.*—Ellen D., aged forty-six, was brought to the accident ward of the Infirmary on Saturday, 15th May, 1875. Her friends said that a large dog, which was chasing another dog, had run between her legs and knocked her down, and that as she was unable to rise after falling, and complained of her hip being hurt, they thought it best to bring her to hospital. When the hip was examined shortness was the first thing discovered, but no crepitus could be detected. The patient was an exceedingly nervous woman, and screamed so loudly during the short examination made, and gave so much trouble, that it was apparent no proper diagnosis could be arrived at without the use of an anæsthetic. She was accordingly conveyed to one of the wards and put under the influence of chloroform. The right limb was then found to be nearly two inches shorter than its fellow, the thigh being flexed and adducted, so that one knee rested upon the other. Altogether, the inward direction of the limb was particularly noticeable. The toe, as Sir A. Cooper remarks, rested against the tarsus of the opposite foot, and the natural roundness of the hip was lost. Abduction and eversion were not possible, but adduction and inversion were easy. The head of the bone could be felt on the dorsum ilii, and it was rather close to the sciatic notch, the prominence of the great trochanter having been dragged higher and nearer the anterior superior spinous process. The pelvis being fixed by Dr. Corby, house surgeon, Dr. Hobart proceeded to reduce the dislocation in the following manner: He first flexed the leg upon the thigh, then the thigh upon the pelvis, and grasping the knee with his right hand drew the limb to the opposite side of the mesian line, and next brought the limb in a line with the trunk, while at the same moment extension was quickly made. Being anxious to guide and follow the movements of the head of the bone, he kept his left hand upon it during the above proceeding, and could distinctly feel it approaching the edge of the acetabulum as the extension with the right hand was effected, when suddenly the head of the bone glided back into the sciatic notch. Attributing this to inability to make proper extension with one hand, and feeling still anxious about using his left hand to manipulate the head of the bone, he got Dr. Shinkwin to make extension of the foot simultaneously with his own extension of the knee. In this way the reduction was effected the second time it was tried. The patient's thighs were then bound together with a broad bandage, and kept so for several days. Three weeks later she left hospital quite well.

In his clinical remarks upon the above case, Dr. Hobart dwelt particularly upon the ease with which the dislocation was reduced when compared with the old application of pulleys—a practice, he regretted to say, which was still too generally used.

Constitutionally he strongly recommended the administration of anæ-

thetics for the reduction of those dislocations of the body where great resistance is apprehended, and mechanically he expressed great confidence in careful and well-directed manipulation, thinking it desirable that, in the first instance, moderate force should be employed, and then the extending power very gradually increased.

MEATH HOSPITAL, DUBLIN.—Cases under the care of J. W. MOORE, M.D., F.K.Q.C.P.; one of the Physicians to the Hospital.

I.—Enteric Fever; Formation of Bullæ on Abdomen; Phlegmasia; Severe Rigors; Recovery.

Ellen N., a servant, twenty-two years of age, fair complexioned, robust, and with slightly reddish hair, was admitted to Ward 19, on May 31, 1875. While at service in the neighbourhood of Rathgar she had been attacked with a "shivering of cold" on Sunday, May 23. This symptom lasted for several hours, and was accompanied or followed by loss of appetite, sickness of stomach, pain in the small of her back, sleeplessness, and perspiration. The loss of sleep persisted for nearly a week; she had no headache, and the bowels were regular. No cause could be assigned for her illness. When admitted, she presented the aspect of a patient suffering from a mild attack of enteric fever. Her pulse was 84; respirations were 24, and the temperature was 100·8°. In the evening the pulse rose to 90, respirations to 30, and temperature to 103·6°. This development of pyrexia was coincident with the appearance of the catamenia. There were no marked chest symptoms, but the submaxillary and cervical glands were swollen. No diarrhœa, tenderness on pressure over the abdomen, or tympanites was present. A very few rose-spots were scattered over the front of the body. She was put on milk diet. During the next five days nothing happened to call for any remark; but on the morning of June 5 a patch of purpura and a large dark-coloured bulla were discovered in the right iliac region. The diameter of the bulla was nearly 1½ inches, and a second smaller vesicle was situated on its inner side. The two bullæ resembled a patch of unhealthy herpes zoster, the vesicles composing which had run together. The patient did not know of their existence, for they were painless, and it was only by accident that they were found on examining the abdomen for rose-spots. A quinine mixture was ordered, containing 8 grains in each dose. The large bulla burst in the night, leaving an unhealthy sore, which ultimately formed rather a deep slough.

The febrile state now became aggravated, and on June 8 (the sixteenth day of her illness) bilious vomiting occurred. The tongue was thickly furred, saburral in character. There was no diarrhœa. She was ordered soda-water and milk. The sore was dressed at first with a

linseed-meal poultice, smeared with glycerine of carbolic acid. On June 11 a carrot poultice with carbolised oil was substituted, and on and after June 16 benzoated zinc ointment, with glycerine, was applied.

At the beginning of the third week the evening exacerbations of fever became strongly marked, the morning and evening temperatures being respectively—21st day, 101·8° and 105·2°; 22nd, 101·2° and 104·5°; 23rd, 100·1° and 104·0°; 24th, 98·2° and 102·0°. On June 15 (22nd day) another attack of bilious vomiting occurred. Five grains of calomel were given, and appeared to subdue the gastro-intestinal irritation which plainly existed. On June 17, for the first time, four ounces of wine were ordered. At this date a slough was separating at the site of the bullæ which had appeared on June 5, and pain was complained of, with swelling in the right thigh and leg. It was afterwards ascertained that she had suffered from phlegmasia of the right leg some eight or nine years ago.

She now became restless, more feverish, with a dry brown tongue. The temperature rose to 104·8° on the evening of June 18 (26th day), and next day she had another attack of bilious vomiting, which continued for some time. She took another bolus, containing 5 grains of calomel. The affected limb was wrapped in cotton wool, carefully bandaged, and slung in a Salter's cradle. This simple treatment afforded the greatest relief to the patient.

June 20 (28th day).—At 9 15 a.m., I found her in a severe rigor, the temperature having fallen to 101·8°. So severe was the shivering that it was impossible to count her pulse. The skin felt cold and clammy, and her face was pale, livid, with almost a jaundiced tinge. Restoratives, etc., brought her round, and she had no return of the rigor until the same hour the following morning. She was now taking moderate quantities of wine, with plenty of nourishment. The bowels were moved by an enema of warm water, and she took a bolus containing 10 grains of sulphate of quinine.

June 22 (30th day).—9 a.m. Pulse, 104; resp., 32; temp., 103·0°. Her right leg had swelled considerably, and was painful over the femoral and along the track of the saphena veins. Great tenderness existed above Poupart's ligament on the same side. In the afternoon another rigor, with excessive bilious vomiting, occurred. 8 p.m. Pulse, 120; resp. 32; temperature 105·4°. She was now taking 4 ounces of port wine and 4 ounces of whiskey. Lime-water and milk freely.

June 23 (31st day).—9 15 a.m. Pulse, 104; resp., 32; temp., 101·8°. She was given 30 grains of sulphate of quinine in 5-grain doses every ten minutes. The pulse fell 8 beats within the first half hour. She was soon fully under the influence of quinine—loud buzzing in the ears being succeeded by considerable deafness. At 5 30 p.m. I found her in a *profuse perspiration*; pulse 94; resp., 28; temp., 100·6°. At 7 15 p.m. the

temperature had further fallen to 100°; pulse, 92; resp., 32. She slept well during the following night.

June 24 (32nd day).—Pulse, 80; resp., 24; temp., 97·8°! Her tongue was moister and cleaner. She felt better. 3 30 p.m. Pulse, 92; resp., 23; temp., 101·0°; 7 30 p.m., pulse 96; resp., 28; temp., 102·0°. A lead lotion was applied to the sore.

June 25 (33rd day).—Had vomiting at 8 a.m. after a good night. Pulse 92; resp., 28; temp., 100·0°. Tongue rather dry. She took 20 grains of quinine in divided doses as before. The evening temperature reached 102·8°, but next morning the record was 98·4°. She slept but indifferently, owing to the pain of her ankle. There was no return of vomiting.

As will be seen from the appended Table, the fever now resumed the characteristic phenomena of the enteric form in its later stages. It may be said to have ceased on the 48th day, after which she became convalescent slowly but surely. The wound on the abdomen healed with some little trouble, and the tenderness and swelling of the leg gradually subsided. On Saturday, July 24, she left hospital for the Convalescent Home, Stillorgan.

Remarks.—The occurrence of bullæ in a comparatively mild attack of enteric fever is sufficiently uncommon to justify the placing of the present case on record. Dr. Murchison^a says—"In three instances, of which two were fatal, I have seen large bullæ on various parts of the body."

The phlegmasia was plainly due to the irritation caused by the slough on the abdominal wall.

The recurrent rigors were regarded with great suspicion. But the event, I think, showed that they were symptomatic of the pseudo-ague which accompanied the attack of phlegmasia.

The vomiting, too, portended mischief, its intimate relation to peritonitis in enteric fever being so well known. The two doses of calomel were given to meet this symptom. I felt no hesitation in giving them, as I was aware that Liebermeister and others prescribed calomel in large doses in enteric fever.^b

^a Continued Fevers. Second Edition. Page 582.

^b Ziemssen's Cyclop. Pract. Med. Vol. I., page 200.

CASE OF ELLEN N.—*Record of Pulse, Respirations, and Temperature.*

Day of Disease	MORNING			EVENING		
	Pulse	Resp.	Temp.	Pulse	Resp.	Temp.
8	84	24	100.8 ^o	90	30	103.5 ^o
9	82	26	100.1	88	32	102.4
10	80	24	100.2	86	34	104.1
11	88	28	101.8	88	26	102.9
12	90	24	100.0	84	30	103.4
13	84	24	99.4	100	30	103.4
14	84	24	100.0	88	32	102.4
15	100	28	100.0	108	28	102.6
16	100	28	100.4	104	36	103.0
17	104	32	101.6	100	32	103.0
18	104	28	101.0	100	28	104.0
19	100	28	101.4	104	28	103.5
20	100	26	100.8	98	32	103.4
21	104	24	101.8	112	24	105.2
22	98	26	101.2	100	32	104.5
23	96	24	100.2	112	28	104.0
24	94	24	98.2	104	28	102.0
25	96	24	99.4	100	24	103.0
26	104	26	101.4	116	36	104.8
27	108	32	102.4	100	32	103.8
28	110	†	101.7	104	32	103.6
29	110	28	103.4	106	36	102.8
30	104	32	103.0	120	32	105.4
31 ^a	104 ^a	32 ^a	101.8 ^a	92 ^a	32 ^a	100.0 ^a
32	80	24	97.8	96	28	102.0
33	92	28	100.0	94	36	102.8
34	84	24	98.4	104	32	103.4
35	98	24	99.9	108	34	103.0
36	100	24	99.2	108	32	102.5
37	84	24	99.0	104	28	102.6
38	96	28	99.0	104	28	102.2
39	100	24	99.0	104	30	101.5
40	92	24	98.6	104	32	103.0
41	92	24	99.2	100	24	102.0
42	84	24	99.0	110	28	101.6
43	92	24	98.4	100	28	101.4
44	84	22	98.4	96	24	98.6
45	100	24	98.4	104	24	100.7
46	104	22	99.0	90	24	100.2
47	108	25	99.8	93	27	99.0
48	112	24	99.0	86	24	99.3
49	98	24	98.4	82	24	98.4
50	100	24	98.0	84	22	98.2
51	102	22	98.4	90	24	98.2
52	100	32	97.8	76	24	98.6
53	87	22	97.2	88	24	98.2
54	84	22	98.4	90	18	98.4
55	88	22	98.0	80	20	98.4
56	120 †	26	98.6	90	26	99.0

^a Quinine, 30 grains, in divided doses.

II.—Enteric Fever, followed by an attack of Typhus in the third week.

Thomas MacM., aged fourteen, a school-boy, resident at a large school in Dublin, was attacked on the evening of Sunday, June 26, 1875, with sickness of stomach and pain in the head. A shivering fit followed on Monday. He said "a chill ran through his body," and that the first thing of all was that he lost his appetite on Saturday. His bowels had been regular, but his sleep was interrupted. The basement storey of the school in which he lived was lately in very bad repair, and it is worth remarking that at least three other boys from the same school have been recently under treatment in hospital, suffering from enteric fever. He was admitted June 30, 1875, on the evening of which day his pulse was 108, respirations were 20, and temperature 103.6° . Next morning the conditions were—pulse, 106; resp., 20; temp. 103.8° . Tongue red at tip, dry in centre, and slightly furred. His eyes were heavy, and conjunctivæ rather congested from want of sleep. There was visible arterial pulsation in the neck. Milk diet, and the mineral acids, with spirit of nitrous ether, were prescribed. As the temperature remained high, quinine was given in 5-grain doses every ten minutes, up to 30 grains on July 2 (seventh day). The third dose was succeeded by some bilious vomiting, and the sixth by simple vomiting. Notwithstanding, free diaphoresis was established, the temperature declined from 103.8° in the morning to 102.5° at 3 p.m., 101.8° at 7 15 p.m., and 100.4° at 9 a.m. next day. The pulse fell 12 beats. At this time rose-spots began to come out in successive crops over the chest and abdomen. They remained visible for three or four days, and were perfect specimens of *taches rosées*. They were carefully marked with circles of ink, and the date on which they successively appeared was noted at the time.

Little need be said about the subsequent history of the case, except to mention that moderate diarrhoea set in on the 12th day, continuing for four or five days, and that rose-spots ceased to appear on the 13th day. The appended table will show that a rapid defervescence took place between the 14th and 15th days—the temperature suddenly falling from 103.2° on the evening of the 14th day to 99.2° on the morning of the 15th. From this point it rose only to 100.4° the same evening.

At this time it seemed as if a favourable recovery were about to follow a defervescence by crisis rather than by lysis. But on the 23rd day the evening temperature registered 100.3° , and next day 101.2° . On the 25th it was 103.6° , and the boy's tongue had become dry and glazed. The nurse told me that he had been "making too free," getting up, running about the room, and flying into a passion with another boy in the same ward. Eighteen grains of quinine given on this day seemed to have no antipyretic effect. On the evening of the 26th day the temperature reached 104.4° , falling only to 102.0° next morning. This day

proved to be the first of a well-marked attack of maculated typhus. On the morning of the third day of this second fever the pulse was 124, respirations 22, and temperature 104.8° . The bowels were free, but the tongue was rapidly becoming parched and covered with sordes. Twenty-four grains of quinine reduced the temperature to 102.2° , and the pulse to 114 in the evening. But the effect was transient; the temperature again rose above 104° , and remained at this height for 48 hours consecutively. On the fourth day a weakening of the heart necessitated the use of wine. I began with marsala, but on the seventh day changed it for eight ounces of port. On the morning of the sixth day a copious eruption of bright-coloured maculæ had appeared; and the suffused eyes, dusky countenance, delirium, and sordes-loaded lips and tongue, fully established the diagnosis of typhus. Some quiet sleep was secured by means of this mixture:—

R.—Liquor. opii sedativ., min. xii.
 Spirit. æther. oleos., ʒij.
 Tinct. hyoscyami, ʒij.
 Aquæ camphoræ, ad ʒiv.

Signa: sumat unciam tertiis horis dum opus sit.

The heart became weaker, until the first sound was nearly lost. The pulse rose to 140, the respirations to 40, and a considerable bronchial complication became developed. Ten ounces of port wine were given daily, for three days, and with markedly good effect. The quantity was lessened gradually from the 12th day.

The “stupor” (τῶφος) of the fever—the fever-cloud—rose on the 12th day, and the lad progressed very well until the 16th day, when the fever terminated by an abrupt descent of temperature from 100.2° to 98.4° . Slight elevations afterwards occurred, and the pulse remained quick. But it was the pulse of debility, and in the presence of a group of favourable symptoms (such as returning appetite, sleep, good looks, and spirits) lost much of its significance.

On August 16 (the 26th day from the beginning of the typhus attack, and the 52nd day from that of enteric fever) he left his bed for the first time.

It is to be noted that no case of typhus fever had been under treatment in the ward in which Thomas MacM. lay for at least two months before his admission.

CASE OF THOMAS MACM.—*Record of Pulse, Respirations, and Temperature.*

Day of Disease		MORNING			EVENING		
Enteric	Typhus	Pulse	Resp.	Temp.	Pulse	Resp.	Temp.
5	—	—	—	°	108	28	103.6
6	—	106	32	103.8	104	28	104.0
7	—	108	32	103.8	100 ^a	32 ^a	101.8 ^a
8	—	98 ^a	24 ^a	100.6 ^a	98	28	103.7
9	—	100	24	103.8	100	32	102.5
10	—	108	28	101.8	100	28	102.3
11	—	104	28	102.4	100	28	104.3
12	—	108	28	103.2	100	32	103.6
13 ^b	—	107	28	102.0	108	30	102.8
14	—	108	32	102.2	112	30	103.2
15	—	96	24	99.2	104	26	100.4
16	—	86	21	98.4	88	24	99.4
17	—	96	24	99.1	104	26	100.4
18	—	96	24	98.5	88	24	100.5
19	—	88	22	98.9	96	24	100.8
20	—	100	24	98.6	92	22	99.8
21	—	92	24	97.4	90	22	99.2
22	—	90	22	98.0	96	24	99.6
23	—	102	20	97.4	100	24	100.3
24	—	112	24	98.2	114	24	101.2
25	—	112	24	99.4	124	26	103.6
26	—	112	24	100.1	116	24	104.4
27	I	114	24	102.0	118	24	103.4
28	II	120	24	104.2	120	28	104.2
29	III.	124	22	104.8	114 ^c	28 ^c	102.2 ^c
30	IV	126	28	104.3	128	36	104.2
31	V	128	40	104.4	128	42	104.6
32	VI ^d	124	40	103.0	144	34	104.2
33	VII	140	40	103.2	146	40	103.8
34	VIII	132	40	102.1	128	40	103.0
35	IX	122	40	102.8	124	38	102.2
36	X	120	40	101.8	120	32	102.6
37	XI	120	36	101.2	130	40	101.7
38	XII	118	38	101.9	126	36	102.2
39	XIII	122	28	101.6	116	30	101.0
40	XIV	112	32	100.8	124	34	102.2
41	XV	114	28	100.0	106	26	100.6
42	XVI	108	28	100.2	118	28	100.8
43	XVII	102	26	98.4	—	—	—
44	XVIII	108	20	97.6	108	24	99.4
45	XIX	104	24	97.0	108	24	98.6
46	XX	118	20	97.6	110	24	98.5
47	XXI	112	20	97.7	112	24	98.8
48	XXII	108	24	97.4	100	20	98.0
49	XXIII	96	18	98.3	112	20	98.6

^a Quinine, 30 grains, in divided doses.^b Last appearance of rose-spots.^c Quinine, 24 grains, in divided doses.^d Macule of typhus appeared.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

Of Eight Large Towns in Ireland, for Four Weeks, ending Saturday, August 14th, 1875.

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES								Annual Rate of Mortality per 1,000 Inhabitants
				Small-pox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		
Dublin, -	314,666	640	469	—	6	16	8	11	14	14	19.0	
Belfast, -	182,082	497	275	2	20	12	8	6	5	16	19.6	
Cork, -	91,965	189	149	—	—	3	1	2	16	6	21.1	
Limerick, -	44,209	99	84	—	—	—	—	—	3	3	24.7	
Derry, -	30,884	41	55	—	1	10	—	1	2	3	23.2	
Waterford, -	30,626	64	38	—	—	—	—	—	3	—	16.1	
Galway, -	19,692	32	25	—	—	—	—	—	1	1	16.4	
Sligo, -	17,285	14	16	—	—	—	—	—	1	—	16.0	

Remarks.

The return for Sligo was not received in the week ending July 24, so that the figures given above apply only to the last three weeks of the period. Except in Limerick and Derry (where the mortality was rather high), the death-rate of this, the eighth four-week period of the year, was moderate or low. Of the zymotic diseases, measles remains as in the seventh period; scarlatina shows a marked increase in Dublin, and an equally marked decrease in Belfast and Derry; whooping-cough, fever, and diarrhoea tend to increase in Dublin; while fever has been rather fatal in Cork. The mortality from diarrhoea is far below the average for the time of year in the Irish towns; but it is very great in some English towns, notably in Leicester, where this disease alone has caused 99 deaths in the four weeks, equal to an annual death-rate of 11.7 per 1,000! In the last three weeks the diarrhoeal death-rate in Leicester has reached the enormous figure of 18.9 per 1,000 annually. On the whole, the prevailing weather of this summer has been very favourable to life.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for Month of July, 1875.*

Mean Height of Barometer, - - -	30·028 Inches.
Maximal Height of Barometer (9 p.m. on 5th),	30·461 „
Minimal Height of Barometer (3 p.m. on 9th),	29·424 „
Mean Dry-bulb Temperature, - - -	57·9°
Mean Wet-bulb Temperature, - - -	54·5°
Mean Dew-point Temperature, - - -	51·5°
Mean Humidity, - - -	79·2 per cent.
Highest Temperature in Shade (on 29th),	74·3°
Lowest Temperature in Shade (on 26th),	48·9°
Lowest Temperature on Grass (Radiation) (26th),	41·0°
Mean Amount of Cloud, - - -	62 per cent.
Rainfall (on 18 days), - - -	2·751 Inches.
General Direction of Wind, - - -	N.W. and E.N.E.

Remarks.

July was exceedingly changeable in character, but, on the whole, the weather was much finer in Ireland than in Great Britain or France. An anticyclone, which appeared in the W. on the 2nd, brought with it a succession of fine and dry, although cloudy, days. These were followed by the rains which accompanied the cyclone of the 9th—a serious disturbance which crossed the N. of Scotland, travelling to the eastward. On the 11th thunder-showers of special severity prevailed in Dublin, where much hail fell. On the 13th the depression, which subsequently caused such a disastrous rainfall in England, was first noticed in the W. The North of Ireland escaped its influence, but in Dublin about 16 hours of continuous rain, with a high E.N.E. wind on the 14th, marked its passage eastwards. The 15th was dry in Dublin, but rain fell in torrents in the W. and S. of England, over which the cyclone was travelling to E.S.E. The 16th and 17th were brilliant days in Scotland and Ireland, but rain fell almost unceasingly in England and part of France. On the 18th rain again commenced at Dublin, owing to the *return of the cyclone of the 13th from the Continent* along the path it had traversed some days previously. Several minor disturbances afterwards travelled from E. to W. across the United Kingdom, renewing the rainfall in England. A thunderstorm occurred at 11·30 a.m. of the 22nd in Dublin. Showery days followed, but the month closed with fine bright weather. At 9·30 a.m. of the 27th a remarkable shower of hay or grass took place at

Monkstown, Co. Dublin—the hay had been raised into the air by a whirlwind which passed over Leopardstown, Co. Dublin, about 8 a.m. on the same day. The unusual character of the rainfall in England may be recognised from the fact that 3·27 inches of rain were registered at Greenwich Observatory in the week ending July 17, and 5·13 inches at Birmingham in the following week. The mean temperature of the month was very low, being fully 3° below the average. On *but two days* did the maximal shade temperature reach or exceed 70°.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

TREATMENT OF CEREBRAL RHEUMATISM BY CHLORAL.

M. BOUCHUT, in a memoir read by him at the Académie des Sciences, says that the serious complication of acute articular rheumatism, called cerebral rheumatism, is only—as proved by pathological anatomy and by the ophthalmoscope—a form of meningitis. Examination of the membranes of the brain reveal a considerable venous stasis with an opaline infiltration of the pia mater, caused by numerous leucocytes. The ophthalmoscope, by means of which the developments of the alterations in the cerebral substance and in the meninges may be followed in the eye, discloses a serous infiltration of the papilla and of the retina adjoining, with dilatation of the retinal veins, which represent corresponding changes in the pia mater and in the brain. Rheumatism of the brain is ushered in by delirium more or less violent, terminating by coma or by asphyxia, sometimes very rapid, which may cause death in a few hours. In three cases of this kind a cure was obtained by means of hydrate of chloral, given by the mouth in doses of from gr. xlv. to 3iss., once or twice at short intervals, so as to obtain an immediate abatement of the agitation the patients presented.—*Gaz. Méd. de Paris*, Juin 26.

THYMOL AN ANTISEPTIC AND ANTIFERMENTATIVE SUBSTANCE.

At the suggestion of Prof. Liebreich, Lewin has investigated the properties of thymol, and has published a part of the results at which he arrived. He states that this substance, the formula of which is $C_{10}H_{14}C_2$, is a benzol obtained by distillation from the oil of thyme, and consists of highly aromatic white crystals soluble in 1,000 parts of hot water. A solution even as weak as this exhibits all its peculiar properties. He found that saccharine fermentation was wholly prevented by a $\frac{1}{10}$ per cent. solution of thymol, while solutions of carbolic and salicylic acid four times as strong were not nearly so efficacious. The thymol solution

also at once arrested a fermentation which had already begun. The quantitative determination of the loss of weight by the process of fermentation gave even more striking results. He found that milk treated with the thymol solution did not coagulate till twenty days later than when mixed with the same quantity of simple water, while it remains perfectly sweet and free from mould at the end of five weeks. The same was the case with white of egg after eleven weeks. Putrid pus, when mixed with the thymol solution, lost its fœtid smell, and remained in this condition until it dried up. Urine similarly treated did not on an average show signs of decomposition till the end of five weeks. He declares, moreover, that thymol is capable of arresting or preventing the action of putrid pus upon the animal system, and is decidedly deodorising. The high price of the article he regards as of minor importance, because it may be used in such dilute solutions. When taken into the mouth a $\frac{1}{10}$ per cent. solution caused a slightly burning and astringent sensation. When taken into the stomach it appeared to prevent fermentative changes, but not to interfere with digestion.—*Centralblatt and N. Y. Med. Record*, June 19.

DIFFERENTIAL OPHTHALMOSCOPIC SIGNS OF CONCUSSION AND OF CONTUSION OF THE BRAIN.

At a meeting of the Académie des Sciences, held July 12, M. Bouchut said that the ophthalmoscope gave most important results in clearing up the diagnosis between concussion and compression of the brain. If there is only concussion of the brain, the optic nerve, he said, preserved its form, its clearness, and its accustomed colours, and the retinal veins as well as the retina do not present any change. If the brain is contused, with or without consecutive inflammation, or if there has been serous or sanguineous effusion with or without fracture of the skull, the optic nerve and the retina are affected; the optic nerve is swollen, it appears flattened, is of a uniform rose tint, sometimes more vascular; its contours are less distinct, and it is the seat of a serous suffusion, partial or general, which extends to the adjacent retina as an opaline transparent tint, veiling more or less the papillary border. The arteries sometimes diminish in volume if the effusion has reached as far as the sheath of the optic nerve, and the retinal veins more or less dilated indicate by the obstruction in their circulation a similar obstruction in the circulation within the cranium.

THE PROPHYLAXIS OF SCARLET FEVER.

In a recent communication to the *Medical Times and Gazette* (July 24), Dr. Brackenridge having given strong practical and statistical evidence as to the value of sodium sulpho-carbolate in the treatment of scarlet fever, indicates a further use of this agent which possesses considerable

interest. Dr. Brackenridge agrees with Dr. Sansom that carbolic acid, when administered internally in a case of infectious disease, acts by disinfecting the disease-germs within the body. If then, argues Dr. Brackenridge, we can by internal disinfectants, destroy or inhibit fever-germs after they have multiplied indefinitely, and produced their pathological effects within the body, may we not reasonably hope that, by previously disinfecting the tissues of the body, the germs which first found their way into them will be much more easily destroyed or paralysed? He, therefore, now administers the sulpho-carbolate of sodium for the above purposes in doses varying according to the age, from five to thirty grains three or four times a day, and sometimes, when well borne, more frequently, to those exposed to the poison of scarlet fever, diphtheria, and measles. It was given in seven families to twenty-two individuals exposed to the poison of scarlet fever; in three families, to fifteen individuals exposed to the poison of diphtheria; and in three families, to eight persons exposed to the poison of measles. The diseases have not in a single instance extended beyond the individuals first affected. Dr. Brackenridge does not think that the results he has as yet obtained are conclusive in proving that by the internal use of a disinfectant we can entirely prevent or modify attacks of infectious disease; but they are, no doubt, remarkable, and should be fairly tested by all who may have opportunity to do so.

THE EFFECT OF REMEDIES ON THE BALANTIDIUM COLL.

WITH a view of discovering some remedy which, without injuring the patient, might kill this parasite, and be brought into intimate relation with every affected portion of the large intestine, Drs. J. A. Waldenström and S. Henschen ("Proceedings of the Upsala Medical Society," Vol. IX., page 579) tried the effect of different substances on the balantidium, with which the remedies were first brought into contact under the object-glass of the microscope. It was thus experimentally determined that kousso, corrosive sublimate, sal ammoniac, common salt, permanganate of potash, saltpetre, the mineral acids, tannin, acetic acid, carbolic acid, and iodine in solution, exercised a decidedly toxic action on this parasite. The most suitable remedy to introduce into the intestinal canal was found to be a large *lavement* containing about 13 fluid drachms of acetic and 80 grains of tannic acid in about 3 quarts of water at a temperature of 98·6° Fahr. By this means the balantidia were eradicated in one case. As regards the causal relation between the parasite and the diarrhoea, the opinion is expressed that the balantidia have no essential bearing on the occurrence or continuance of the diarrhoea, but that it should be looked on as a more casual complication in other intestinal affections.—*Nordiskt Med. Arkiv.*, Vol. VI., Part 1. 1875.

J. W. M.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

OCTOBER 1, 1875.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*Surgical Contributions.* By MR. P. J. HAYES,
Surgeon to the Mater Misericordiæ Hospital.

I. *Shortening and Deformity of the Femur, consequent upon Fracture,
successfully treated by Re-fracture.*

CASES demanding re-fracture of recently united bones are not of frequent occurrence, hence the following report may prove of sufficient interest to merit notice.

J. M., aged twenty-seven, on the 23rd of August, 1874, received a fracture of the right femur by falling from a car. The bone was broken in the upper part of the middle third, and though the fracture was simple, considerable swelling of the thigh took place before the services of a surgeon could be obtained. Then for some days it was found impossible to apply a splint or reduce deformity. Six days after the accident a Liston's thigh splint was employed, but it was necessary to use, in addition, a short anterior splint, in order to overcome the forward tendency of the upper fragment. The patient could not well bear the pressure of an efficient perineal band, and the gentlemen who had charge of the case determined to remove the splints, and replace them by a gypsum bandage. The splints were taken off on the 1st of October, but as there was some delay in obtaining suitable gypsum the patient was left with sandbags at either side of the limb for twenty-four hours. During the night he

managed to twist the thigh, and on the following morning his medical attendant was disappointed to find considerable bowing outwards at the seat of fracture. Chloroform was administered, and the limb brought into as good a position as was possible; then the long splint was re-applied, but as a perineal band could not be borne, extension was kept up by means of a weight and pulley. This treatment was maintained during three weeks, and then the gypsum bandage was employed, and kept upon the limb for nearly three weeks longer. On the 11th November, whilst walking with crutches, the patient again received a hurt of the injured limb from a heavy fall, which was caused by one of the crutches becoming fixed between the bars of a cellar grating, and the surgeon who had attended him previously advised that he should be sent to the Mater Misericordiæ Hospital, where he was admitted on the 23rd November, under the care of Mr. Tyrrell, who found considerable bowing of the thigh in a direction forwards and outwards, as well as shortening of the limb by about two and a half inches.

Mr. Tyrrell determined to break through the callus, and use strong traction, but unfortunately, owing to indisposition, he was forced to relinquish for a time hospital attendance, and having described the case to me, he requested that I should undertake the necessary treatment. On the 2nd of December the patient was brought fully under the influence of ether, and placed upon a mattress on the floor of the operation theatre. Dr. Cruise's apparatus for making extension in cases of dislocation was then applied to the limb, exactly as though the patient was suffering from a dislocation of the femur upon the dorsum of the ilium, the traction force was worked up to 125 lbs., and, with my knee against the seat of fracture, I was able to bring all my strength and weight to bear upon the convexity of the bowed thigh. After some minutes I found indications of yielding in the mass of callus, and a few more efforts enabled me to break through it completely. The fragments were disengaged, and considerable extension effected by increasing the traction to 132 lbs.

The patient was then removed to his bed, and sandbags placed at either side of the thigh. I thought it well to allow an elapse of twenty-four hours before using any splint, or subjecting the patient to additional disturbance. The man was in good spirits on the ensuing morning; he had slept well, and was not in pain; therefore I proceeded to apply a splint which Dr. Cruise kindly lent me, and which proved of great value in effecting and maintaining powerful

and necessary extension during three and a half weeks after the operation.

It may be as well to describe this splint before proceeding with particulars of the case. The splint consists of a long wooden portion, to extend from the axilla down beyond the foot; projecting from the inner surface of this splint, close to the lower end, is a thick stout block, perforated from above downwards, and giving passage to a screw twelve inches long, the thread of which fits a spiral groove in the aperture of the block; attached to the upper extremity of the long screw is a cross piece, with projecting hooks, constructed to catch the loop of a Pancoast's stirrup; fixed near to the upper end of the long splint is an iron bar, doubly bent at right angles, so as, when applied, to ascend on one side of the patient's thorax or abdomen, cross in front, and descend on the other side; each end of this bar has in it an opening, through which the posterior part of a perineal band can be passed, the other part being tied to the middle portion of the bar which crosses in front of the patient's body. The splint was used in the following manner:—The patient's leg, from the knee down, was shaved and well washed with vinegar and water, then six strips of soap plaster were caused to adhere one over another; thus united they formed an adhesive strap, about two inches wide, and sufficiently long to extend from the inner side of the knee down the leg, form a good loop below the heel and arch of the foot, and then reach up the leg to the outer side of the knee. Some cotton wadding having been applied over and behind the malleoli, the strap was secured by the exposed surface of soap plaster to the sides of the leg, and a piece of wood three inches and a half long was placed transversely in the loop below the foot; strips of soap plaster were crossed round the leg, so as to afford additional security against the risk of the stirrup slipping from its position under the strain of traction.

Two perineal bands, right and left, were prepared with the view of relaxing one and tightening the other whenever the skin might be likely to suffer from prolonged pressure. The splint was padded, then placed along the outside of the fractured limb, connected below to the stirrup, and above with the perineal band on the right side. Steady working of the screw effected force for extension and counter-extension, and the amount of force employed was regulated by the feelings of the patient, who, being a very sensible, intelligent man, did all in his power to second efforts for his improvement.

The progress of the case was very satisfactory, owing to the care

which my resident pupils, Messrs. Flanagan and Hartigan, gave to the working of the apparatus. Three and a half weeks after re-fracture the limb was put up in a gypsum bandage, and the patient allowed to go about on crutches. Three weeks later the gypsum was removed, and the patient left hospital on the 24th of January in the present year, with a straight limb, shorter than its fellow by only three-quarters of an inch.

An interesting case of re-fracture of the femur five months after union was published by Mr. Butcher in the number of this Journal for November, 1874. In that instance very considerable force was required to break the callus. In the *London Medical Record* for March 31st, 1875, Mr. Bellamy refers to a valuable paper by Professor Nussbaum, of Munich, in which the subject of re-fracture is dealt with, and especial mention made of the treatment to be adopted when the definitive callus has become harder and stronger than normal bone. Thus Langenbeck makes a small wound in the soft parts, then bores a hole through the callus at an angle, and with a fine key-hole saw cuts from this hole right and left until only thin bridges of surface bone remain undivided. After a time healing of the wound in the soft parts takes place, and then moderate force effects simple fracture of the bridges of bone.

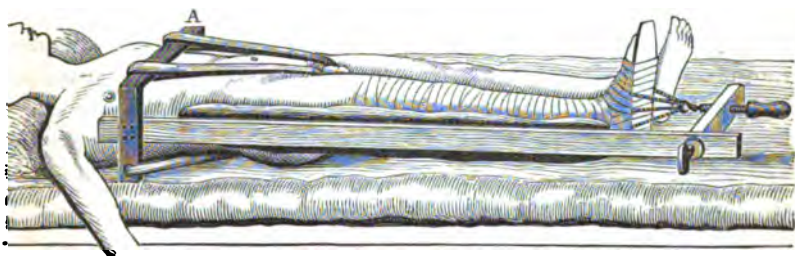
Szymanowsky cuts through the soft parts, and saws a wedge-shaped piece out of the callus, three parts of the thickness of which he removes; then, after healing of the soft parts, he easily breaks through the remaining portion of callus.

Nussbaum's proceeding is to chisel through about three-quarters of the thickness of the bone, allow the superficial wound to heal, and afterwards to fracture the undivided portion of bone. He avoids sawdust and *débris*, which might retard healing, by using a fine sharp cabinet-maker's chisel, instead of either saw or drill.

In most cases, however, the surgeon will find he has not only to break through the osseous connexion, but also to overcome the resistance and contraction of fibrous tissue developed around the seat of fracture. In the case I have recorded such tissue was abundant, and, owing to its tough and unyielding nature, I found it impossible to restore normal length of the limb. I received the following communication from Dr. Cruise since the above report was written. The accompanying woodcut will render distinct portions of my description:—

“I send you a wood-cut of the splint for fractured femur which I devised some years ago.

"Its advantage amounts to this—that by means of the iron arch A the surgeon has the opportunity of making counter-extension from either side of the perineum at will, and under these circumstances it is impossible, provided ordinary care is taken, for the perineum to become tender, or unable to bear the pressure of counter-extension.



"Your recent case of re-fracture of a deformed femur exhibited the necessity of forcible extension, and the case for which I devised this modification of Desault's long splint proves the same fact. My patient was a man named John Reilly, aged forty, who was brought to the Mater Misericordiæ Hospital June 25th, 1863, with an oblique fracture of the right femur, and also a fracture of the corresponding humerus. The latter was easily managed, but the fracture of the femur offered great difficulties. It was remarkably oblique, and the patient being a powerful muscular man, shortening took place, and increased, despite my best efforts, because, whenever I made extension sufficient to overcome the deformity, the perineum became tender, and after a day or so the strap became unendurable. In this difficulty I thought of the iron arch A, had it made by a blacksmith in my neighbourhood, and I attached it, as the woodcut shows, to the long splint by means of four strong screws.

"From the time I used it I experienced no further trouble. Whenever one side of the perineum became tender I relaxed the strap there, and tightened up that on the opposite side. In this way counter-extension caused no annoyance, the femur united without any appreciable deformity, and the man left the hospital perfectly well on the 29th of September, 1863.

"Of the superiority of this method I think there is no need to speak.

"The idea of making counter-extension from either side of the perineum at will is not original with me. Several American surgeons have done so, and notably the brothers Burge, of

Brooklyn, and Lente, of Cold Springs, New York. For Lente's apparatus I refer you to Hamilton on 'Fractures and Dislocations,' page 423.

"The iron arch I have suggested has, nevertheless, the advantages of great simplicity and cheapness, may be made in an hour for any long splint, and makes the counter-extension less oblique and, therefore, less annoying than any apparatus I know of.

"Of the frequent necessity of *forcible* extension in oblique fracture of the femur, I am convinced from experience, notwithstanding its condemnation by so high an authority as the late Mr. Syme (see Article I., in his 'Observations on Clinical Surgery,' 2nd edition)."

II. *Cases of Excision of the Knee-joint.*

The great act of surgical conservatism, excision of the knee-joint, is no longer looked upon by those who really know much about it as an operation of doubtful value or extreme risk, but it certainly is a measure to be adopted only after grave consideration and due estimation of the circumstances belonging to each case which may seem to demand a proceeding so serious. In the *Irish Hospital Gazette*, January 1st, 1874, I published some conclusions arrived at from my previous experience of excision cases. I now report particulars of two successful excisions, as they serve to illustrate points which ought to weigh in favour of excision, instead of amputation, when it comes to be a question which operation is to be selected, or advised, by the surgeon.

CASE I.—C. H., a girl, aged eighteen years, gave the following history:—She enjoyed good health until about eight years ago, when she was thrown from an outside car, and fell upon the left knee. The pain at the time of the injury was so severe as to cause fainting and sickness of stomach. Two or three days after the accident she was able to go about, though the joint remained swollen and rather painful, but at the end of a month she became unable to use the limb, in consequence of extreme tenderness, increased swelling, and weakness of the knee. A doctor was then consulted, who said there had been dislocation of the joint; he extended the leg, and advised perfect rest. About a week afterwards she gave the knee a twist, or jerk, but did not mind it. The doctor, however, appeared to think the "dislocation" had recurred; he, however, used external application of iodine, and



Fig. 1.

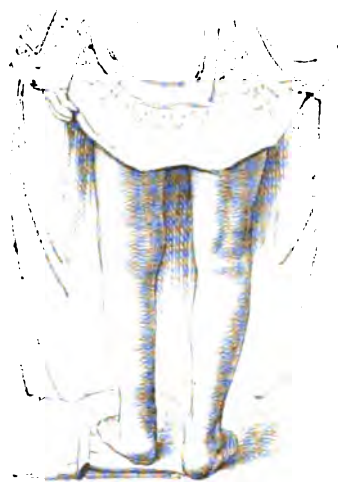


Fig. 2.

Case of M. C.



Fig. 1.

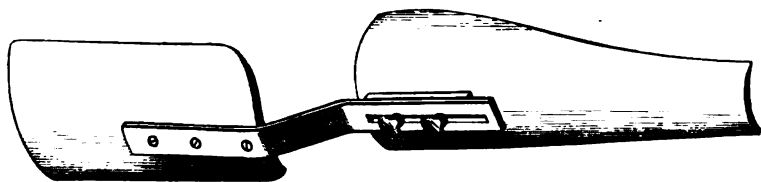


Fig. 2.

Case of C. H.

enjoined complete rest. After a time the patient could walk, but she was lame, and felt a constant dull pain in the knee. This was rendered worse by exercise. The pain became very severe some two years since, but was relieved for a while by blistering, &c. Soon, however, painful startings set in, accompanied by hectic fever, and in July, 1874, she came to Dublin, and was admitted to the Mater Misericordiæ Hospital, under the care of Dr. Cruise. In spite of the most judicious treatment little change for the better occurred, and as she had a sharp attack of erysipelas, consequent upon the use of counter-irritation, she was advised to return to the country, in order that her general health might undergo improvement. She was again admitted to hospital at the close of September, and as other treatment had not been productive of benefit, on the 22nd of October Dr. Cruise applied the actual cautery freely to the skin at either side of, as also above and below, the patella. This seemed to produce good effect for a time, but in December the pain returned with renewed violence, the nocturnal startings became more frequent and distressing, and urgent hectic symptoms appeared; therefore, in consultation, it was considered advisable to recommend excision of the affected joint, and my colleague complimented me by kindly placing in my hands the further conduct of the case. The circumference of the left knee now exceeded that of the right by more than an inch and a half; the swelling was almost uniform, and gave the joint an oval appearance; the patella was movable; pressure applied over the tuberosities of the tibia, or condyles of the femur, caused considerable pain, and sleep could only be produced by hypodermic injections of morphia. On the 24th of January, in the present year, I excised the affected joint, ether was the anæsthetic used, and hæmorrhage prevented by Esmarch's method. After the operation the raw surface was well sponged with a solution of chloride of zinc (gr. 20 ad. ʒi.), and the wound closed, save at either angle or corner, by sutures of carbolised catgut. The limb was then put up in the following manner:—Two flannel bandages, one over the other, were evenly applied from the toes up to the level of the anterior tibial tuberosity; the thigh was bandaged also with flannel from the groin down to within about two inches of the lower end of the femur. A splint, specially designed by myself, consisting of two concave pieces of wood—one to receive and fit the posterior surface of the leg, from the upper part of the calf to within two and a half inches of the ankle; and the second, to

receive the posterior surface of nearly the lower two-thirds of the thigh—the two portions of wood being connected behind the popliteal region by a strong flat piece of steel, with an oblique step in it, so as to keep the leg portion of the splint one inch in advance of the thigh portion. Thumb-screws and an oblong slot in this steel strap enable the surgeon to increase or diminish the space between the wooden portions of the splint, according to requirements.



The leg and thigh pieces having been suitably padded, the limb was laid upon them, and the interval between them regulated to about three inches. A small splint of poro-plastic substance was next padded, and laid over the anterior surface of the thigh, and then a gypsum bandage, carried from the toes to the upper edge of the leg bandage (flannel), brought behind the steel band and popliteal space, and carried on round the thigh to the highest level of the splint. This was repeated until a strong casing of gypsum rendered the position of leg and thigh perfectly secure. Cotton wadding, saturated with melted paraffin, was inserted into the space between the skin of the popliteal region and the steel portion of the splint; also every chink in the gypsum bandage near the wound was painted over with paraffin, whilst the skin in the neighbourhood of the wound remained quite uncovered, and free for the application of dressings, &c. A piece of oiled lint was laid lightly across the wound, and the patient removed to bed. The soft tissues united by adhesion, not a drop of pus ever formed, and on the 14th of February the patient was able to be dressed and carried from her bed to a sofa which was on one of the corridors. By March 18th the patient was able to walk with crutches, as the splint was removed, and replaced by a simple gypsum bandage. There was excellent union. Within the next fortnight she could walk without any assistance from crutch or stick, and left the hospital on the 1st of May with a perfectly straight strong limb, an inch and three-quarters shorter than its fellow.

As regards pulse and temperature, the highest reading of each was on the third day after operation, when the former was 120 in

the minute, and the latter reached 101° F. On the tenth day both were down to the normal standard.

The total amount of bone removed was an inch and a half, measured from above downwards. The disease had completely destroyed the synovial membrane, and there was ulceration of the cartilage, both upon the outer condyle of the femur and corresponding facet upon the patella. The cartilage for a considerable area around the ulcerated points was of a rose-red hue, owing to sub-cartilaginous osteitis

CASE II.—M. C., a girl, between seventeen and eighteen years of age, was admitted to the Mater Misericordiæ Hospital, under the care of Mr. Tyrrell, on the 2nd November, 1874.

History.—Nearly five years back, when at school, she fell from a high table, and her left knee struck upon a hot-water pipe. There was no wound, but she fainted from excessive pain. After the accident she remained in bed for some days, as the joint became very painful and swollen, but at the end of a week she could walk a little, and seven weeks later she returned to the day-school. At this time when the knee was at rest the girl was free from pain. It remained swollen, however, and after much walking the pain returned, so almost every night she felt it stiff and tender. Matters gradually changed for the worse, and after the lapse of two years the patient could not walk, as the least motion produced severe articular pain, and at the same time most distressing nocturnal startings of the limb set in. A medical man was at length consulted. He strapped the affected joint, and applied a suitable splint; of course enjoining strict repose. Under this treatment great relief from pain was experienced, but in other respects the condition of the joint seemed not to undergo any change. After a time the pain and startings returned, consequently the girl was brought to Dublin.

It is unnecessary to state the constitutional and local treatment employed by Mr. Tyrrell. The knee was in such a state that all his efforts were directed to allay existing inflammation, and keep the limb in proper position until ankylosis should take place. By the end of December the girl's sufferings were severe indeed. Splints and all extending media had to be removed, as she could only tolerate the semi-flexed position for the knee. There was now a tendency towards backward dislocation of the tibia, and it became manifest that excision of the knee was the proceeding most likely

to save the patient's health and limb. Mr. Tyrrell being unable to attend at the time, I undertook charge of the case, and on the 27th of January I performed the operation, removing in all one inch and five lines of bone (measured from above downwards). No hæmorrhage occurred, owing to the employment of Esmarch's bandage, after the removal of which three small vessels required to be twisted. The wound was sponged out with chloride of zinc solution, and then the edges brought together by means of catgut sutures. The limb was put up in the manner already described (see preceding case), and nothing could be more satisfactory than the position and security of the bones. Five days after the operation erysipelas attacked the skin about the wound, and necessitated division of the sutures; but, save that all chance of union by adhesion was lost, the effect was not unfortunate, for the inflammation rapidly subsided, and soon granulations filled up the interval between the flaps, suppuration being extremely slight and of very short duration. The temperature reached 102° F. at the onset of the erysipelas, and during the first eight days the pulse ranged from 100 to 130 in the minute. After that temperature and pulse fell to the normal condition. The girl was up a month after the operation, and as the bandage did not now tightly embrace leg and thigh, she could rotate the entire limb within its casing. On the 18th March the splint was removed, and a strong carefully applied gypsum bandage substituted for it, the patient being allowed to go about on crutches. Union soon became very strong, all swelling subsided, and the shortening was only an inch and one-third. The result is quite as perfect as in the case of C. H. Permission for her discharge from hospital was given May 1st, but she was kept on longer, in order that photographs of the limb might be taken. The joint, when examined, showed complete destruction of encrusting cartilage, erosion of part of the head of the tibia, and uniform pulpy degeneration of the synovial membranes.

The points to which I would call attention in the foregoing cases, as indicating the propriety of excision, are—1st. The occurrence of progressive articular disease after injury, and not because of constitutional fault; and 2nd. The comparatively slow advance of the disease, and total absence of suppuration.

As regards the operation, my usual practice is to moderately flex the leg upon the thigh, and carry an incision across the ligamentum patellæ, from the posterior edge of one femoral condyle to a corres-

ponding point on the other (of course, when the limb is extended this incision will form a curve convex downwards). I remove the patella, and saw off no more of femur or tibia than is absolutely necessary, but I pare away every trace of articular cartilage, and remove as completely as possible diseased synovial membrane and crude formations. It is confessedly a difficult matter to overcome the tendency which the lower end of the femur has to project on a plane in front of the greater part of the upper end of the tibia; an outward bowing of the limb also requires to be guarded against. By means of the splint I have described it is alike easy to arrange and retain the bones in perfect position, whilst in other respects all the conditions favourable to early union of the tissues are secured, with comfort to the patient, and with the least possible amount of trouble to the surgeon.

ART. VIII.—*Case of Cerebral Rheumatism; Purpura; Intense Neuralgia, accompanied by Increase of Temperature during the Paroxysms; treated by Chloral and Bromide of Potassium; Recovery; Remarks.* By CHARLES A. MACMUNN, B.A., M.D., Univ. Dub.

A DELICATE-LOOKING boy, aged ten years, was seized with headache and vomiting on February 18th, 1875, and on the 21st his condition was as follows:—Face anxious and pale; pupils slightly contracted; violent headache and grinding of teeth; purpuric spots visible on wrists, ankles, legs, abdomen, and chest; tongue brown and dry; bowels constipated; pulse 140; temperature 99.6° ; no tympanites or tenderness of abdomen on pressure; no increase in splenic or hepatic dulness; heart excited, no murmur; lungs normal. When asked a question, the boy stared vacantly, but could not reply. He had had scarlatina and measles some years before; had been always subject to diarrhoea and grinding of the teeth during sleep. The father was healthy, with the exception of occasional attacks of facial neuralgia.

The urine was acid, loaded with lithates, sp. g. 1031, slightly albuminous, no tube casts. A bladder of ice was applied to the head, and fifteen grains of bromide of potassium given at bed-time. He raved incessantly during the night.

22nd.—There was headache and great intolerance of light; the temperature was 101° ; pulse 160; he sighed frequently; tongue moist, red at tip and edges, yellow in the centre. In the afternoon

furious delirium came on, and he became so unmanageable that two men could with difficulty keep him in bed. From this state he passed into a semi-comatose one. In the evening the pulse was 170, irregular; the temperature, 102° , and floccitatio was present.

The dose of bromide was increased to twenty grains and ten grains of chloral added, to be given every four hours, till sleep was procured.

23rd.—He was still in a state of partial coma. Tongue brown and dry in the centre, red at tip and on the sides; pulse 148; temperature, 100° ; heart quite normal; purpuric spots still visible. He slept during the evening, when the pulse was 148; temperature 100.2° .

24th.—The knees, ankles, and wrists were swollen and painful; there was also pain in head and back; heart normal; pulse 140; tongue covered with a white, creamy fur; temperature 100.2° . At five o'clock p.m. the temperature was 101.3° ; pulse 144; tongue brown and dry; delirium present; ten grains of citrate of potash were given every four hours, and the dose of bromide and chloral increased.

25th.—At four o'clock in the morning furious delirium again came on. It passed off at ten, leaving the child much exhausted but quite conscious. Temperature 99.6° ; pulse 134; urine free from albumen—still containing an excess of urates.

26th.—Joints still swollen and painful; urine clear; temperature 101.2° ; pulse 132; heart normal.

27th.—He complained of pain in his forehead, ears, back of head, and abdomen. Pulse 130; temperature 100.8° .

28th.—A soft, systolic murmur—loudest over heart's apex—was heard for the first time; no delirium; temperature 101.6° ; pulse 140.

March 1st.—The præcordium was tender to the pressure of the stethoscope, no friction-sound, the murmur was about the same; tongue red and raw, and dotted with whitish patches; temperature 102.6° ; pulse 130.

2nd.—The temperature was 104.8° ; pulse 140; tongue red and covered with small blisters; lungs normal. Two grains of sulphate of quinine were given every four hours.

3rd.—The temperature had fallen to 102.2° ; pulse 120; heart excited, murmur harsher and louder; right knee very painful.

4th.—Temperature 101.2° ; pulse 120; severe pain in head and spine towards evening.

5th.—The joints were free from pain and swelling; temperature 98.5° ; but, towards evening, pain in head and spine came on, and the temperature was 103° , pulse 126, while this pain lasted.

7th.—The right knee was again swollen and tender, and on this, as well as on the preceding days, pain in head, spine, and extremities came on at 3 o'clock p.m.

Next day the knee was better, but the neuralgic pain was present.

10th.—The right knee was again affected, the temperature reached 102° , pulse 130, and the usual pain was present at 3 o'clock.

11th.—In the morning the temperature was 98.2° ; the joints were less painful. At 4 o'clock (pain being present) the temperature went up to 104.6° ; pulse 130. The heart was now quite normal.

12th.—The left shoulder-joint was very painful and slightly swollen; the morning temperature was 100.6° ; pulse 124. The usual pain on the following days came on at the same hour, but the morning temperature on those days was never higher than 98.8° , nor was there any further trouble from the joints.

The treatment, which consisted in the administration of quinine and bromide of potassium—three grains of the former with ten of the latter every four hours—was continued up to March 16th, when, having failed to relieve the severe and agonising pain in the spine and legs, which I have described in the remarks on the case, it was changed for a draught containing five grains of citrate of iron and ammonia, with two grains of iodide of potassium, given every four hours. This treatment also failed; hence the quinine and bromide were again tried, with the addition of three minims of the liquor strychniæ, and chloral draughts had also to be given during a paroxysm. The interval between the paroxysms now increased, so that they became tertian instead of quotidian; then their duration became shorter, until the last one, on March 30th, only lasted two hours. By that time the boy, in spite of all the support he could be got to take, was almost a skeleton and excessively weak.

April 2nd.—He was asked to read, but could not see the print.

For a long time after the attack slight choreic movements were noticed, and peculiarities in the child's manner and temper still cause his friends anxiety.

Remarks.—Although the name cerebral rheumatism is abandoned

by almost all medical men who have recently written on the subject, I retain it, not being able to find a better name for the disease, the symptoms of which are given above.

The occurrence of cerebral rheumatism in such a young subject, the very close resemblance to tubercular meningitis, making diagnosis a difficult matter at first, the accompanying neuralgia, the absence of hyperpyrexia, and the fact of recovery, all make this case interesting. Given a child with intense headache and vomiting, with a slightly increased temperature, a brown and dry tongue, a flaccid abdomen, constipated bowels, and purpuric spots, anyone would think of tubercular meningitis, or uræmia, or some febrile disease, before rheumatic fever. But the subsequent joint mischief—pain and swelling quickly passing from one joint to another, the acid sweats, and the copious deposit of lithates in the urine—made the diagnosis easy.

The purpuric spots throw some light on the peculiarities of the case: firstly, on the head symptoms; secondly, on the neuralgia, which probably had three factors for its production—(a.) the thinned state of the blood, evidenced by purpura; (b.) the rheumatic poison in the blood; (c.) lowered vitality after fever. The neuralgia commenced in the side of the face, passed to the back of the head, down the spine, and into the extremities. It at first accompanied, and afterwards followed, the rheumatic symptoms. It remained when the temperature became normal; but the paroxysms themselves were accompanied by a remarkable increase of temperature. Thus, on four different occasions the temperature during a paroxysm was found to be 104.6° , 102.6° , 103° , and 104° ; the corresponding morning temperatures varied from 98° to 98.8° . Now-a-days there is a growing tendency to account for delirium, in cases of rheumatic fever, by attributing it to hyperpyrexia, but, as in the present case, so in many cases, there is no hyperpyrexia. Hyperpyrexia and delirium, combined in acute rheumatism, generally prove fatal. Thus I find eight cases of this kind recorded in the *Lancet*,* from January, 1870, to June of the present year, every one of which ended in death.

Medical authorities differ widely in their views on the subject of head symptoms occurring as a complication of rheumatic fever; to collect the opinions of all would be a prodigious task; I have, however, collected a few.

* *Lancet*, May 21, 1870; July 30, 1870; October 19, 1872; June 7, 1873; September 6, 1873.

Sir Thomas Watson,^a referring to acute rheumatism, says:—"Neither is the intellect affected except when carditis takes place, and then as I stated formerly violent delirium is apt to ensue, misleading the practitioner, drawing his attention away from the chest, where grave and often fatal changes are in progress, and fixing it upon the head, where no inflammation at all exists, but which is disturbed through derangement of the cerebral circulation consequent upon the cardiac disorder; with this exception, we do not find patients in acute rheumatism delirious."

Aitken and Tanner^b are both almost silent on the subject.

Niemeyer^c says:—"Occasionally, also, death occurs with the symptoms of sudden collapse when there is no complication, being preceded for a short time by delirium, coma, or other symptoms of great nervous disturbance. On autopsy in such cases no change can generally be found in the central organs of the nervous system; hence it has been supposed they depend on an unexplained blood-poisoning." He also states that in a dissertation by Dr. Flamm cases are reported in which *post-mortem* examinations showed the presence of inflammatory disease of the meninges.

Wood,^d of Philadelphia, said:—"There is reason to believe that the disease is seated more especially in the membranes, though an irritation is undoubtedly propagated to the cerebral substance."

Copland^e describes two forms of the disease:—⁽¹⁾ "A form may occur in the course of acute rheumatism, without any abatement, or with slight abatement either of the fever or the local disease. In these cases the head affection is chiefly nervous, and contingent upon the febrile condition in connexion with depression of nervous or vital power, &c. . . . In such cases the head affection is independent of any disease within the cranium; ⁽²⁾ the symptoms referred to the head may appear at an advanced stage of acute or sub-acute rheumatism, and are generally followed by subsidence of the disease of the joints. This," he says, "is the most unfavourable class of cases."

Trousseau,^f who gives a most satisfactory and complete account of the disease, believed that cerebral rheumatism depends on a special predisposition acquired or hereditary, and divided it into six

^a Watson. Lectures on Practice of Medicine. 5th edition. Vol. II., p. 804.

^b Aitken. Science and Practice of Medicine. 6th edition.

^c Niemeyer. Textbook of Practical Medicine. 7th edition. Vol. II., p. 482.

^d Wood. A Treatise on Practice of Medicine. 4th edition. Vol. I., p. 451.

^e Copland. Dictionary of Practical Medicine. Art.—Rheumatism.

^f Trousseau. Clinical Medicine. Vol. I. New Sydenham Society's Translation.

forms—⁽¹⁾ apoplectic; ⁽²⁾ delirious; ⁽³⁾ meningitic; ⁽⁴⁾ hydrocephalic; ⁽⁵⁾ convulsive; ⁽⁶⁾ choreic; remarking, however, that these are not distinct species, any more than the delirious or convulsive forms of typhoid fever or scarlatina. In most of the autopsies on such cases congestion of the pia mater only was found; he believed the disease to be a neurosis, and denied that it can be produced by the administration of quinine or the practice of venesection, as some have held.

Bastian^a holds that delirium and stupor in cerebral rheumatism, as well as in all forms of pyrexia, may be due to obstruction of the minute vessels in the grey matter of the brain, independent of vegetations on the valves of the heart (which were supposed by others to be carried away by the blood current, and so to plug the cerebral vessels).

Liebermeister^b accounted for these symptoms by supposing that the high temperature of the blood caused paralysis of the nerve centres.

Lebert^c thought there must be a morbid alteration of the blood itself; and

Murchison^d believes the high temperature is the real key to the pathology of the cerebral symptoms, the latter being produced, like head symptoms, in other forms of pyrexia, viz., by the circulation in the brain of products of combustion—urea, uric acid, &c.—which, either on account of deficiency in the excreting power of the kidneys or on account of excess of these products, fail to be eliminated, the nervous system being previously weakened in one way or another, and so unable to withstand the depressing influence of the rheumatic attack.

Da Costa^e accounts for the symptoms by supposing the blood to be vitiated, and embolic plugging of numerous small arteries in the brain to take place. And still more recently

M. Bouchut,^f in a memoir read before the Académie des Sciences, states that cerebral rheumatism is only a form of

^a Bastian, quoted by Murchison in Lecture in Lancet. See below.

^b Ditto.

^c Lebert. Sydenham Society's Year-book. 1862.

^d Murchison. Lecture in the Lancet, May 21, 1870.

^e Da Costa. American Journal of Medical Science for January. Abstract in London Medical Record for March 17, 1875. Da Costa further states that in the majority of cases there is no meningeal lesion whatever.

^f Bouchut, quoted by Dr. Duffey in the Dublin Journal of Medical Science for September, 1875.

meningitis, thus reviving an old doctrine (which is true for some cases only).

It appears from all these statements that cerebral rheumatism is not indicated by any invariable appearance after death; hence each author from his own personal experience forms a different opinion. The number of cases that have been observed since the introduction of the clinical thermometer has been far too small to enable us to account for the symptoms by hyperpyrexia alone; besides cases occur, as in the present instance, without such hyperpyrexia; and I saw a case last year where before death the temperature reached 109.5° , and yet there was merely transient delirium.

As to treatment, I hesitated to give opium in this case, because there was a strong tendency to coma, and albuminuria was present. The application of ice to the head, and draughts of chloral and bromide of potassium seemed to have a decidedly beneficial effect on the delirium. The neuralgia was benefited, I have no doubt, by the quinine and strychnine. Even if there had been hyperpyrexia, I could not on any account have been persuaded to use the cold bath; I would prefer to give quinine in 5 or 6 grain doses at short intervals, as Drs. Foot and Moore have been doing so successfully in other forms of pyrexia lately at the Meath Hospital, Dublin.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

On Concussion of the Spine. By JOHN ERIC ERICHSEN, F.R.C.S.,
Eng. Pp. 340. London: Longmans, Green, & Co. 1875.

THE history of spinal injuries and of their consequences forms one of the most interesting studies in surgery. The very obscurity which attends them, and the difficulty with which the symptoms are interpreted, must serve as special attractions to all who are enthusiasts in their profession, and who like the luxury of overcoming obstacles. Mr. Erichsen has been known as a busy observer of this class of affections. In 1866 he published a few lectures upon the nervous shocks resulting from railway collisions, and those gave a direction to the work of many of his brethren. The present volume is an elaboration of the former, and has increased to considerable dimensions as compared with its predecessor. The author is already a very experienced writer, and we are glad to say that this book upholds the reputation which he has long enjoyed. The lectures are pleasing in diction, and the cases given are admirably selected and most carefully reported. Some of these show how slight may be the causes which give origin to effusion, softening, and paralysis; and no surgeon who reads them will, we think, treat lightly any injuries of this class that may come under his notice.

In those instances in which the force is applied directly and violently to the spine itself, the results are generally immediate, and there is not much difficulty as to a diagnosis; but there are very many cases in which the violence has been slight and indirect—a wrench, or twist, or a jar caused by jumping from a height—and in which symptoms come on at various intervals. To this class belong many of the railway cases which come before the courts, and which sometimes perplex the medical witnesses. In an affection in which we must often depend so much upon the truth of the patient in his description of symptoms, the greatest care is needed to arrive at a sound conclusion. There is no doubt that impostors

at times deceive; nevertheless it is not to be forgotten that what appear to be the least serious injuries have very often fatal terminations. These cases are generally ushered in after a time by general nervous symptoms—depression, defective memory, confusion of thought, disturbed sleep, impaired vision and touch. Then the attitude is peculiar—"It is stiff and unbending. They (the patients) hold themselves erect, usually walk straight forwards, as if afraid or unable to turn to either side. . . . If the patient is asked to stoop and pick up anything off the ground, he will not be able to do so in the usual way, but goes down on the knee, and so reaches the ground." Then the gait becomes unsteady, like that of a partially drunken man, there is loss of motor power, and there may be ultimate death.

The pathology of concussion of the spine is not very advanced. What we know of it is rather inferential than otherwise, for it is difficult to obtain an examination of the cord after death. Mr. Erichsen has never seen a case; but Mr. Gore, of Bath, was able to send the cord of such a patient to Mr. Lockhart Clarke. There was a distinct diminution of the antero-posterior diameter of the cord in the cervico-dorsal region; "the narrowing was owing to absorption of the posterior columns, which, of all the white columns, were exclusively the seat of disease. These had not only to a great extent disappeared, but the remains were of a dark-brownish colour, and had undergone important structural changes."

It is important to remember that, in these cases, two opposite conditions seem to be produced—spinal anæmia and spinal inflammation. But "there is this essential difference between the two affections, that whereas the sign of functional disturbance may be much the same in both, in one it is underlaid by organic disease and structural change, in the other by no appreciable pathological condition."

Some remarks on the diagnosis between spinal anæmia, myelitis, and meningitis are interesting:—

"So far as the local symptoms are concerned, it will be found that in spinal anæmia there is always pain at one or more points along the vertebral column. This pain is associated with diffused cutaneous hyperæsthesia of the back. The pain is severely complained of if the patient is moved by the surgeon, but it will be observed that he may move himself in dressing and undressing without exhibiting any evidence of suffering. Although there is much cutaneous hyperæsthesia, there is often a good deal of deep-seated tenderness, especially on pressing on

either side of the spinous process in the inter-vertebral spaces. The paralysis, if any, is incomplete, there is no affection of the sphincters, no cramps or chronic spasms; there is often a general emotional or hysterical condition associated with the spinal symptoms; the general appearance of the patient is anæmic, the pulse quick, feeble, and compressible. These symptoms are not progressive, will rapidly attain their culminating point, and there remain stationary for a great length of time.

"In myelitis the pain in the spine is localised, there is little if any cutaneous hyperæsthesia. The localised pain is greatly increased by all movements of flexion, rotation, or by pressure downwards. It is greatly increased by percussion, the application of heat, or any act, indeed, which influences the spinal column sufficiently deeply to convey an impression to the contained inflamed medulla. There is in these cases always a sensation as if the cord were tied tightly round the body on a line corresponding with the seat of inflammation. The paralysis is often quite complete, the sphincters are affected; there is atrophy of the limbs, their nutrition being acutely interfered with.

"In meningitis the general symptoms more or less closely resemble those of myelitis, for indeed it is almost impossible to find meningitis existing without a certain inflammatory implication of the cord. Theoretically, the two diseases may be considered apart, but clinically they are almost invariably associated. In meningitis, however, there are these additional symptoms, clonic spasms, often of a painful character, frequently more or less permanent contraction of certain muscles or groups of muscles, and in both myelitis and meningitis there is, as a rule, a total absence of the hysterical condition.

"There are two therapeutic tests which are of considerable value in confirming the diagnosis between these several conditions. Spinal anæmia is always benefited by strychnine and iron. It is usually considerably aggravated by the bromides. The reverse is the case in meningo-myelitis. In this condition strychnine greatly aggravates the symptoms which the bromides commonly have a tendency to alleviate, those at all events that are dependent upon the concomitant cerebral irritation.

"The ophthalmoscopic appearances are also of considerable service from a diagnostic point of view. In spinal anæmia we have a pallid condition of the optic disc, which in the more advanced cases may proceed to white atrophy. In the inflammatory states of the cord and its membranes, more especially in meningitis, there is considerable hyperæmia of the fundus of the eye."

The lectures upon the medico-legal aspects of concussion of the spine and upon treatment are very valuable. The former one is

admirably judicial, and contains many suggestions which will be useful to the practitioner who may be engaged in these cases in courts of law. The book is one of the most important contributions to surgical literature that we have had for some time, and is one which we are able to recommend to the profession without any reservation.

On Poisons in relation to Medical Jurisprudence and Medicine. By ALFRED SWAYNE TAYLOR, M.D., F.R.S., &c. Third edition. London: J. & A. Churchill. 1875. Crown 8vo, pp. 834.

"IN no branch of medical science is the modern advance of knowledge more characteristically displayed than in forensic medicine; and by none has greater security been thereby given to human life. The chance of impunity is the greatest stimulus to crime; and the discovery of means by which its detection is rendered more facile must be, therefore, looked upon as the most important prevention to its commission."

These words were penned twenty-seven years ago. They composed the opening paragraph of a review of the first edition of Dr. Taylor's admirable treatise on Poisons—of a review in which our predecessor in the editorial chair at the time spoke in unqualified terms of praise of this work. True as they were then, the lapse of more than a quarter of a century has but enhanced their significance. For if in 1848 toxicology was considered to have attained the dignity of a science, what shall we say of the gigantic strides made since then in the methods of chemical, microscopical, and spectroscopical research on which alone such a science can be securely founded?

Dr. Taylor has brought to bear on the compilation of this volume stores of learning, experience, and practical acquaintance with his subject, probably far beyond what any other living authority on toxicology could have amassed or utilised. He has fully sustained his reputation by the consummate skill and legal acumen he has displayed in the arrangement of the subject-matter, and the result is a work on Poisons which will be indispensable to every student or practitioner in law and medicine.

The book may be divided into three parts. The first consists of twenty-two chapters, and treats of Toxicology in general. The author's accepted definition of a "Poison" is to be found at

p. 2—"A Poison is a substance which, when absorbed into the blood, is capable of seriously affecting health or of destroying life." He very properly adds that there are, no doubt, some substances which are regarded as poisons—such as the mineral acids and alkalies, although absorption into the blood does not appear to be absolutely necessary to their action. The absorption, elimination, and deposition of poisons; their remote or systemic action; the tolerance and intolerance of poisons; the evidences of poisoning in the living and dead body; the framing of medico-legal reports and the conduct of medico-legal analyses are the principal topics which are discussed in the first portion of the work. Part II. treats of "Irritant Poisons," under the headings and sub-headings (A.) *Mineral Irritants*—(α.) Acid Poisons, (β.) Alkaline Poisons, (γ.) Non-metallic Irritants, (δ.) Metallic Irritants; (B.) *Vegetable Irritants*; (C.) *Animal Irritants*. Part III. similarly deals with "Neurotic Poisons" under the headings (A.) *Cerebral or Narcotic Poisons*; (B.) *Spinal Poisons*; (C.) *Cerebro-Spinal Poisons*; and (D.) *Cerebro-Cardiac Poisons*.

It is unnecessary to say anything more of a work which has in reality long since won general approbation. The modern character of the third edition is sufficiently indicated by such articles as those on chloral hydrate, physostigmia, and so on. It would be well were medical practitioners to remember one short sentence in the section on chloral hydrate—"Instances of the fatal operation of this substance are now very numerous."

The many illustrations dispersed throughout the volume are carefully executed, and will render it still more valuable, especially to the medical expert.

The Surgeon's Pocket-book. By SURGEON-MAJOR PORTER, Assistant-Professor of Military Surgery, Army Medical School, Netley. Pp. 291. London: Charles Griffin & Co.

THIS little pocket-book was awarded the prize offered by the Empress of Germany for the best essay on the Practical Treatment of the Wounded in War. When we mention that the judges were Billroth, Langenbeck, and Socin, of Basle, we give sufficient evidence that the essay is a good one. The author has attempted very little original work. He has depended largely upon the experiences of others, but he has nevertheless so collected them as

to give any surgeon who may be in doubt, and unable to refer to standard books, very useful aid. We like especially the opening pages on the various modes of transport for the wounded, and on the appliances which may be extemporised for fractures. The book is well illustrated, and altogether will be found to be worthy of the high judgment which the surgeons we have named have passed upon it.

1. *New Inventions in Surgical Mechanisms.* By EDWARD DAVY, F.R.C.S., Eng. London: Smith, Elder, & Co.

2. *On the Treatment of Simple Fracture of the Clavicle.* By FRANCIS VACHER. Birkenhead.

MR. DAVY's pamphlet refers to fifteen surgical appliances which he has invented from time to time. Some of them appear to be ingenious and useful, but the account given of them is generally meagre, and does not enable the reader to form a fair judgment of their merits or otherwise. The pamphlet is simply a catalogue, with references to journals in which detailed descriptions have appeared.

The author of the second pamphlet believes that the methods of treating fractured clavicle are unsatisfactory. He accordingly has devised two tin shoulder-caps, which he attaches anteriorly and posteriorly by straps. By bracing the shoulders back, and supporting the forearm of the injured side, the fracture is reduced, and the acromial fragment of the clavicle is fixed in the position attained. He has tried it in several cases with much success.

The Interests of the Public and the Medical Profession. The Annual Discourse before the Massachusetts Medical Society, June 9th, 1875. By GEORGE H. LYMAN, M.D., Boston, Mass. Boston: Daniel Clapp & Son. 1875.

ANNUAL addresses are usually rather formal matters, consisting of long and nearly worn-out old saws, combined with a little self-glorification, but the discourse of Dr. Lyman is one of the most refreshing, well-written, and masterly essays of its class which we have ever had the pleasure of reading. We regret extremely we cannot devote much space to Dr. Lyman's paper, but we can heartily recommend

it as a liberal and masterly discussion of many of the most important questions which agitate our profession. Dr. Lyman treats of the various questions of specialism, the admission of women to practise medicine, and the regulation of unlicensed practitioners. These remarks, coming, as they do, from a leader of professional opinion in a country where the profession is differently organised from what it is here, have special weight, and should be highly instructive to medical politicians in this country. We are glad to express our concurrence in the views so ably put forward by Dr. Lyman, but would suggest that he is in many ways badly informed with regard to the state of the profession in these lands. We regret that the public are not so well protected against quackery in the United Kingdom as Dr. Lyman seems to think.

The Carmichael Prize Essay, 1873: Medical Politics. By ISAAC ASHE, M.D., M.Ch., &c. Dublin: Fannin & Co. 1875.

EACH Carmichael Prize Essay, as it appears, leads us to wonder when the flow of these lengthy, wordy, and same productions is to cease. Far be it from us to despise the wisdom of Carmichael, but we cannot think he was very far-sighted when he made his will in 1849. It seems to us that in those days Carmichael thought that there was not sufficient public spirit in the profession to produce medico-political literature without a substantial inducement. If Carmichael were alive at the present day he would see some of the best and most energetic members of our profession devoting large portions of valuable time to the discussion of medical politics without any pecuniary reward; and, further, he would find—we believe to his no small disappointment—that the most valuable medico-political writings have been produced, not in response to the calls of the trustees of the Carmichael Prize fund, but from the working of the public spirit of the profession. We believe that, if the trustees of the Carmichael fund had been allowed more latitude in the choice of subjects for the essays, the Council of the Irish College of Surgeons would, by the exercise of a wise selection of subjects, have now accumulated a number of valuable medico-political essays, which would have added lustre to the great name of Carmichael, and have redounded to the credit of the College. But Carmichael had not willed it so, and it has come to pass that Carmichael essays and Carmichael essayists are looked upon as

nuisances at the College, and obstructions to the more beneficial application of a fund bequeathed in mistaken generosity. The Carmichael prize has had the result of taxing the ingenuity of writers to say something new on an old subject once every four years. We must give Dr. Ashe the credit of having ingeniously written a very excellent essay on some well-known and pretty well worked-out medico-political questions. We fail, however, to find any *new* ideas in Dr. Ashe's essay, or any suggestions for the improvement of the state of the profession which have not been made before. Dr. Ashe, however, gives an able review of the leading medico-political questions of the day and the suggestions for the removal of professional grievances, the improvements in the relations between the public and the profession, the government of the profession, and professional education and examination. We cannot find anything new or striking in these suggestions, and we think Dr. Ashe could with a more careful exercise of that ability for compilation which is displayed in his book, have reduced his essay to half its length. The great character of a forced plant is its size, and the literary plants produced by the Carmichael hot-bed abound in this quality—without, we regret to say, the healthy flavour which their originator intended.

The Clinical Thermoscope and Uniformity of Means of Observation.

By EDWARD SEQUIN, M.D. New York: Putnam's Sons.

THE "riding a hobby to death" is sometimes a criminal act; and we are afraid Dr. Sequin will soon commit this crime with regard to medical thermometry. Dr. Sequin's writings, from being valuable contributions to clinical thermometry, are gradually becoming worse than useless. While Dr. Sequin advocates "Uniformity of Observation," he is steadily pursuing all kinds of thermometric vagaries. His so-called "thermoscope" is nothing but a badly constructed and inaccurate form of air thermometer; and we should be sorry to rely upon it as a test in any of the cases referred to by Dr. Sequin. Dr. Sequin seems to be quite ignorant of the changes in temperature which take place after death, and has, manifestly, an exaggerated idea about being buried alive, or, as he seems to anticipate, being "burned alive," now that cremation is growing in popularity. While we admire Dr. Sequin's zeal for medical thermometry, we would earnestly request him not to kill his hobby by overwork.

PART III.

HALF-YEARLY REPORTS.

REPORT ON MENTAL DISEASE.

By RINGROSE ATKINS, M.A., M.D., &c., Assistant Medical Officer,
District Lunatic Asylum, Cork.

IN the following Report I have endeavoured to collect, as succinctly as possible, some of the recent advances made in connexion with insanity and cerebro-mental pathology, selecting from the mass those points which I considered might prove of interest not only to those connected with the specialty, but also to physicians generally who may be interested in scientific research. For the sake of convenience, I have divided the subjects brought forward under the four following heads:—

- I. GENERAL CONSIDERATIONS OF INSANITY.
- II. CEREBRAL ANATOMY AND PHYSIOLOGY.
- III. CEREBRO-MENTAL PATHOLOGY AND HISTOLOGY; AND
- IV. POINTS CONNECTED WITH THE TREATMENT OF SOME
OF THE FORMS OF MENTAL DISORDER.

I. *General Considerations of Insanity.*—In a lecture delivered before the students of the Bellevue Hospital Medical College (*American Journal of Insanity*, April, 1875), Dr. J. P. Gray, Physician to the State Lunatic Asylum, Utica, N. Y., discusses the three theories of insanity now held, stating them as follows:—

1. That insanity is an actual disease of the brain and of the mind, of the organ and its product. This theory logically requires the mind to be a physical entity, described by some as a secretion, by others as an effect of cerebral action of an undefined character. "This, the 'Somatic theory,' assumes the operations of the mind to be an emanation from those of the body, and considers mental disorders to be merely bodily ailments."—*Feuchtersleben*.

2. The second is the psychical theory, first enunciated in modern times by Heinroth. It is the purely spiritual theory that insanity is essentially and only a disease of the mind.

3. That insanity is a disease of the brain, a morbid physical

state, and not in any sense a disease of the mind, but only so far as the mind is concerned, a disturbance of its manifestations. This theory assumes a soul or spirit independent of bodily conditions, so far as disease and death are concerned, and not a cerebral product in any sense. It assumes the brain to be the "physical instrument of mental action."—*Bucknill Crim. San.*

Dr. Gray gives his adherence to this last theory, insisting, as Dr. Griesinger has said, that "insanity is a disease, and that disease being an affection of the brain, which also causes death, it can only be properly studied from a medical point of view," and remarks that "he (Dr. Gray) has never carefully examined an insane person who did not present physical marks of the disease, and never saw a *post mortem* of the brain of an insane person where the microscope failed to reveal lesions of structure." Dr. Batty Tuke, speaking on this subject, says (*Edin. Med. Journ.*, Nov. 1874):—"It is utterly opposed to all the ideas of the *mens medica* that an insane mind can exist in a sane body. There is no analogy in any other system, and the fact that the moral and intellectual faculties are not the only ones implicated, that the disease, which evidences itself by perversion of mental functions, is invariably attended by changes in the general system, affords strong and valuable support to the general theory of the corporeal nature of insanity." "How many cases does the general practitioner meet with in every-day practice in which there is not, to a certain extent, a mental condition differing from the normal mental condition of the patient. The various conditions comprised under the generic terms of dyspepsia, disease of the liver, spleen, and kidneys, fevers, pregnancy, and the puerperal condition, and surgical diseases, more especially those of the bladder (*vide* case in *Journal of Psychological Medicine*, April, 1875) and rectum, are rarely, if ever, unaccompanied by impairment or perversion of the intellectual powers, or of the moral condition of the patient." "In traumatic insanities we cannot doubt the sequence of cause and effect, and why should we doubt the power of strong moral shock, or loss of sleep, which we know are accompanied by considerable vascular changes, to produce permanent structural abnormalities in the delicate organisation of the brain; doubting it simply implies an admission that our present appliances are not so perfect as to detect the initial processes of the disease." Dr. Clouston says, speaking of general paralysis of the insane (*Journal of Mental Science*, July, 1875), "When the great French physicians, Calmeil, Delaye, Bayle, and Esquirol, in the

beginning of the century, first seized on a particular group of mental symptoms, associated them together, found they had a regular sequence and history, that they were connected with certain obvious departures from the normal state of the brain and its membranes, and when they gave their generalisation a name, and called it 'general paralysis of the insane,' they sounded the death-knell of all the metaphysical and spiritual theories of insanity. . . . The existence of such a disease is by far the best justification for a system of classification of mental disease, such as that of Dr. Skae, which aims at distinguishing from each other the true *diseases* affecting the cerebral convolutions, and not merely ticketing similar groups of symptoms with a name. It is quite certain that under the term insanity there are included many pathological species of brain disease, just as distinct as general paralysis, which we shall ultimately be able to segregate and distinguish." With these evidences before us, drawn both from fact and analogy, we cannot go far wrong in adopting as a broad basis of insanity Dr. Tuke's elaboration of Dr. Skae's definition, that "*insanity consists in morbid conditions of the brain, the result of defective formation, or altered nutrition of its substance, induced by local or general morbid processes, and characterised especially by non-development, obliteration, impairment, or perversion of one or more of its psychical functions.*" The spiritual theory, however, is not yet dead; as Dr. Gray remarks, "You will find it in all classes of society. Intelligent people will say, 'Doctor, it is the mind that is wrong; what can medicine do?'" No stronger evidence of this tendency can be obtained, says Dr. Batty Tuke, than by examining the British Official Nosology, where only "six disorders of the intellect" are catalogued, the idea of somatic disease being studiously ignored, the fact there standing expressed by very high authority, that insanity is not a disease of the body, merely a disorder of the intellect.

In the lecture already mentioned Dr. Gray discusses some of the terms used in treatises on insanity, and briefly defines the most common as follows:—

Hallucination is, in its restricted and medical sense, a false perception of the senses. The person sees, hears, smells, or feels that which has no existence.

Illusion is an error of perception. The person transforms a real object or sound into something else.

Delusion is, in a general sense, a false idea; in a medical sense, a false belief. The person misinterprets the manner,

speech, or acts of those about him, or their circumstances and conditions.

He arrives at the following conclusions as regards hallucinations:

1. That in cases where such are present there is no disease of the organs of special sense.

2. Hallucinations disappear with the decline of delusions, if recovery takes place.

3. Hallucinations take on the character of the prevailing delusions, or false line of thought.

4. Hallucinations disappear in dementia or failure of mental activity; but remain in chronic mania, with activity of mind and fixed delusions.

5. Entirely blind and deaf persons have hallucinations of sight and hearing when insane.

6. Hallucinations of sight are prominent and frequent in the dark as well as in the light.

7. In the acute stages of insanity hallucinations and illusions are present, and rapidly change with the constantly changing false ideas, revealing their mental origin.

8. The hallucinations of the insane are not simply vague sounds or words, or lights, or ghostly shadows flitting about; they are compound and varied, often consisting in seeing and talking with people in long conversations. They are often like a reverie, intensified or personated.

In the *Archiv. für Psychiatrie* (abstracted in the *Lond. Med. Rec.*, August 16th) Dr. Fürstner discusses the mental affections occurring during pregnancy and the puerperal states, and gives the clinical histories of thirty-four cases. He considers that there are three distinct periods during which mental derangement may ensue, the far greater contingent being furnished by the actual delivery period, the next by the period of lactation, and the last by that of pregnancy. Of the thirty-four cases recorded, the proportion in each was twenty-one, eight, and five. Of the direct causal connexion between these periods and the psychoses occurring in them nothing is known, but hereditary tendency to insanity, or to such diseases as epilepsy, hysteria, or other neuroses, or habits of intemperance, play an important part in their causation. Of Fürstner's thirty-four cases, eighteen were primiparous, and sixteen multiparous, and he considers that the mothers of illegitimate children are not specially affected, as has been taught by very high authorities, and he does not think difficult labour predisposes. Melancholia predominates during pregnancy, being

often light and transient when coming on in the early months. When, however, the attack begins late in pregnancy the prognosis is bad, the labour not favourably influencing the symptoms, and life being frequently endangered from mal-nutrition. For the first twelve days after delivery the occurrence of hæmorrhage, inflammation of the uterus and appendages, lactation, mastitis, &c., may excite mental derangement, while the re-establishment of menstruation may have a similar effect for a further period of six weeks, the insanity most frequently occurring either in the first ten or twelve days, or in the fourth or sixth week, the intermediate period being free. At the delivery period the mental symptoms have no specific character, and the prognosis is exceptionally good. The psychoses coming on during lactation are, in like manner, in no way specific. In the same paper is an abstract of Dr. Savage's observations on the same subject, taken from the *Guy's Hospital Reports*. He thinks that illicit pregnancy is a special cause of insanity, in this particular being directly opposed to Dr. Fürstner.

II. *Cerebral Anatomy and Physiology*.—In his first Morrisonian lecture for the current year Dr. Batty Tuke described his recent observations on the anatomy of the membranes of the brain. He has arrived at the conclusion that there are only two membranes, instead of three, as is usually taught, covering the brain—the dura mater and the pia mater—and that the arachnoid has no existence as a separate membrane, exhibiting a number of beautiful preparations and diagrams illustrating this point, and showing that this is not a mere question of terms, by pointing out many pathological and physiological questions which are affected by it.—(*British Medical Journal*, May 29.)

M. H. Duret (*Archiv. de Physiologie Normale et Pathologique*, 1874, quoted in the *Chicago Journal of Nervous and Mental Disease*, January, 1875, and the *Lond. Med. Rec.*, June 30, 1875) details his researches on the circulation in the brain. The author first describes the arteries of the base and the great ganglia of the brain. On these depend the vascular relations of the cranial cavity. The latter part of the paper gives the circulatory process in the cortex, and it is only the latter I can now mention, as being more intimately connected with the present subject. The anterior cerebral artery, the author finds, supplies with its main trunk the gyrus and sulcus rectus with the olfactory nerves, and then divides into—(a.) an anterior internal frontal; (b.) a median internal frontal;

and (c.) a posterior internal frontal artery, for the corresponding portions of the brain. The arteria fossæ Sylvii gives out four branches for the cortex—(a.) an inferior external frontal; (b.) an anterior parietal, a median parietal, and a posterior parietal artery. The three terminal branches of the posterior cerebral are the anterior temporal, the posterior temporal, and the occipital arteries. The author did not find any noticeable anastomoses between the arteries of the cerebral cortex, and, from this fact, many localised softenings of the convolutions may be explained. The author also, from his investigations on the arterial systems of the corpora striati, optic thalami, and cerebral ventricles, draws important conclusions regarding softenings occurring in these regions.

M. Gobley (*Le Progrès Médical*, January 2, 1875) arrives at the following conclusions regarding the chemical constituents of the brain:—

1. The cerebral substance in man contains about 80 per cent. of water.

2. It contains two albuminoid substances—one soluble in water, and not distinguishable from albumen; the other insoluble in water, and for which the name of cephaline is proposed.

3. The fatty matter of the brain is chiefly composed of cholesterin, lecithine, and cerebrine; it also contains traces of oleine and margarine.

4. The brain contains the usual salts of the system and extractive matters, some of which are soluble in water and alcohol, and some in water, and not in alcohol.

5. During putrefaction the cerebral pulp furnishes acid products, amongst which we recognise oleic, margaric, phosphoglyceric and phosphoric acids.

6. The average composition of the brain may be given as follows:

Water	.	.	.	.	.	80.00
Albumen	.	.	.	.	.	1.00
Cephaline	.	.	.	.	.	7.00
Cholesterin	.	.	.	.	.	1.00
Cerebrine	.	.	.	.	.	3.00
Lecithine	.	.	.	.	.	5.50
Oleine, Margarine, Creatine, &c.	.	.	.	.	.	1.50
Chlorides, Alkaline Phosphates, and Earthy Salts	.	.	.	.	.	1.00
Total	.	.	.	.	.	100.00

—(*Chicago Journ. Med. and Nerv. Dis.*, April, 1875.)

The New York Medical Journal, March, 1875, contains the report of the Committee of the New York Society of Electrology and Neurology, consisting of Drs. J. C. Dalton, J. W. S. Arnold, G. M. Beard, A. Flint, junior, and J. J. Mason, on the localisation of motor centres in the brain. They experimented on dogs, following the method of Hitzig, and in general the results obtained coincided very closely with those of the last-named observer. The committee say, "There is no doubt that there are certain limited spots upon the surface of the cerebral convolutions, which, when subjected in the etherised animal to a weak galvanic current, will cause distinct momentary contractions of separate muscles, or groups of muscles, on the opposite side of the body; in repeated instances bilateral correspondence of cerebral centres was found, but it cannot be said that in all instances this was complete, although in the human brain it may be so." Galvanisation of the dura mater, or other sensitive part, produces by reflex action muscular twitchings on the same side of the body. All the centres of motion for the anterior and posterior limbs were found to be situated in the convolution immediately surrounding the frontal fissure. The centres for flexion and extension for the anterior and posterior limbs the committee have always found in the external part of the pre-frontal convolution, just anterior to the fissure, and in the post-frontal convolution; just behind it. The centre for flexion of the head and neck in the median line is in the lateral and anterior part of the pre-frontal convolution, where it bends downwards and outwards. The centre for the facial muscles is in a region situated in the latter part of the hemisphere, immediately about the supra-sylvian fissure. The committee found that on several occasions the contractions produced seemed to increase in intensity with the repetition of the stimulus at short intervals, and also that a deeply etherised condition of the animal will sometimes suspend the movements altogether. A weak galvanic current, from eight cells, may cause distinct localised crossed movements,*

* At the meeting of the Brit. Med. Assoc., in Edinburgh, the results of Dr. Ferrier's experiments on the localisation of sensory centres in the convolutions were brought before the psychological section. The method followed was the comparison of the effects of electrical irritation with those following localised destruction of parts of the brain by means of the actual cautery or scalpel. The two sets of experiments supported and explained each other. The most important fact demonstrated by this series of experiments was the localisation of regions of special sense in the convolutions, and this, along with localisation of centres of motion proper, served to clear up the true significance of the reactions to electric stimulation.

while a stronger one, sixteen cells, applied to the same spot will produce a confused movement in all the limbs at once.

Dr. H. Nothnagel (*Centralblatt. f. d. Med. Wissensch.*, No. 37) gives the following conclusions, drawn from his experiments on rabbits, in regard to the functions of the optic thalami:—

1. They have nothing at all to do with the innervation of voluntary movements.
2. Just as little does their extirpation produce any direct disturbance of the cutaneous sensibility.
3. On the other hand, they appear to stand in direct connexion with the “muscular sense.”

III. *Cerebro-Mental Pathology and Histology.*—Dr. Clouston, in his Sixth Morisonian Lecture, 1873 (*Journal of Mental Science*, July, 1875), draws the following deductions regarding the pathology of “general paralysis of the insane:”—

1. That it is a disease of the grey, or cellular parts of the nervous system.

2. That it illustrates better than any other disease with which we are acquainted the tendency to that progressive degeneration which specially characterises the diseases of the nervous system, for it not only goes on steadily from bad to worse, but advances into ganglia, such as the retina and sympathetic, that have no continuity with the brain, except by white fibres.

3. The disease is in all its symptoms—mental, motor, sensory, and vaso-motor—chiefly characterised by symptoms of weakness of power and want of co-ordination—is, in fact, essentially a dementia and a paralysis from the very first.

4. The stage of maniacal excitement of the disease is accompanied by such increase of temperature and symptoms of congestion of the brain as strongly to point to its being the result of a process either inflammatory or closely allied to it, not affecting the meninges only, but more especially the cortical substance of the brain.

5. That the excitement and congestive attacks are accompanied by stasis of the blood in the capillaries of the pia mater, as is shown by the tendency to apoplexy and false membranes. Those false membranes seem to hold an intermediate position between the products of œdema and inflammation.

6. That the origin of the disease is usually in exhaustion or irritation of the brain-cells that regulate and control the co-ordinating centres of mental function and motion; in other words,

that element of the nervous centres that has the highest and most important functions of all—that this irritation, or exhaustion, sets up a diseased degenerative process in them, which slowly, but certainly, spreads to every group of nerve-cells in the nervous system, with which those higher nervous centres have direct relation.

7. That so far as our present pathological facts go, we have more reason to suppose that the disease begins in the outer layer of the cortical substance of the brain than in any other part, but that it may first affect different convolutions in different cases.

M. August Voisin (*L'Union Médicale*) arrives at the following conclusions regarding the same disease:—

1. General paralysis is an inflammatory affection. It is accompanied by fever. This fever has its special symptoms and march; it presents a certain periodicity, as can be shown by a graphic curve.

2. The histological characters of the cortical substance are entirely similar to the characters presented by the other chronic visceral inflammations, and consist in arteritis, in transudation of sanguine plasma, the organisation of this plasma into cellules and embryo-plastic nuclei in infinite numbers, then into fusiform bodies, and finally into fibrillary tissue in the walls of the vessels and adjoining nervous substance.

In the *Brit. Med. Journ.*, June 19, 1875, the same author has a paper on the lesions occurring in “speech-defects” in this disease, an abstract of which has been already given in this Journal.

In the *American Journal of Insanity*, July, 1874, Dr. J. P. Gray gives an account of his microscopical investigations, extending over fifty-two cases of insanity, both acute and chronic. He has found in every instance that the capillary system was affected, and this appeared to be the initial element in the disease. This fact was observed particularly in epileptic and syphilitic cases, the principal changes observed being atrophy and lymph exudation, though in acute cases the atrophy occurred more rapidly, and without any exudation, thus indicating the change to be of a non-inflammatory character. Increase of neuroglia, hyperplasia of connective fibres, and diminution of nuclei were commonly found, the increase in the neuroglia in chronic cases being more prominent in the grey matter than in the white, and taking place to a greater extent in the anterior than in the other regions of the brain. This increase in the neuroglia generally occurs in localised

regions, or in connexion with the capillaries, and the spots were surrounded with condensed connective tissue; they originate in the neuroglia, and are granular and friable, and by their mechanical pressure cause absorption of cells and fibres, giving rise to loculi in the tissue, and constituting there a Gruyère-cheese appearance, resembling the cavities produced by hæmorrhage, but differing from them in the absence of blood-colouring matters in the surrounding tissues; and by the absence of vessels in connexion with them, the nerve-fibres are the last element to become implicated in the general change taking place, the vessels, nerve-cells, and neuroglia all becoming affected before them. The author states that in general paresis he has found that the primary changes take place in the vessels commencing in circumscribed portions of the external coats of the arterioles and larger capillaries, and ultimately involving the entire circumference of the affected vessels, the nerve elements becoming affected secondarily by increase of the connective fibres and molecular granulations. In epileptic insanity pigmentation of the multipolar cells was well marked and constant, and in a case of acute syphilitic insanity extensive fatty degeneration was observed, in addition to the lesions of the vessels, &c.

The author deduces, as a result of these investigations, that the lesions in insanity commence in the vessels, the cells, neuroglia, and fibres being involved secondarily from disturbed nutrition, and in support of this view quotes two cases of acute mania of short duration, where granular masses were found both on the inner lining and between this and the wall of the vessel, to the extent of producing complete blocking of its canal, an observation exactly coinciding with my own in a similar case (*vide Journal of Mental Science*, July, 1875). From his observations Dr. Gray concludes that insanity is a physical disease of the brain, of which the mental disorder is a symptom, and that the various forms which the latter assume are due, not to the variety of the lesions in several cases, but to the different parts of the cerebral centres affected. Dr. Kempster (*American Journal of Medical Science*) gives the results of his examinations, which very closely tally with those of Dr. Gray. Dr. Batty Tuke, in the Morisonian Lectures for 1874 (*Edin. Med. Journ.*, November, 1874, to April, 1875), describes in general terms the appearances observed by him in over 100 cases of insanity, mostly chronic. The changes in the vessels he has found to be—1st. Simple dilatation; 2nd. Exudation deposits; 3rd. Opacity

and thickening of the hyalin membrane; 4th. Dilatation of the retaining canal; and 5th. Hypertrophy of the muscular coat. The nerve-cells he describes as being affected with—1st. Molecular, pigmentary, and fuscous degeneration; 2nd. Atrophy; 3rd. A hypertrophied, or “inflated,” condition, as it has been called by Dr. Herbert Major (*vide West Riding Asylum Reports*, Vol. IV.); while he mentions the morbid conditions of the neuroglia to be—1st. General sclerosis; 2nd. Disseminate sclerosis; 3rd. Miliary sclerosis; and 4th. Atrophy.

Dr. Adler (*Archiv. f. Psychiatrie*, Vol. I., 77, quoted in the *Chicago Journal of Mental and Nervous Disease*, April, 1875) describes the alterations in the arterioles found by him. After referring to the enlargement of the lymph spaces described by Durand Fardel (Dilatation of the Retaining Canal Rep.), he describes cystiform enlargements which he observed in the corpora striata and nucleus lenticularis. In a case of senile dementia close examination revealed a vessel in the centre of these cavities. The outer wall of these cysts seemed to be formed by a separation of the external tunic of the vessel, the intermediate space forming the cavity. Inside the cysts were found pigmentary granulations, which the author considers to have passed through the coats of the vessel by diapedesis. These cystiform enlargements are most commonly found in long-standing cases of senile dementia, but they may occur in young persons without regard to the particular form of insanity. Another modification of the vessels noticed by the author was a thickening and fusion of the adventitia with the external tissues. Such appearances had already been noticed by Rokitansky, who considered them as due to increase of the connective tissue. These thickenings form little grey patches and stripes in the brain substance along the blood vessels, and appear in fine sections, like thickly massed nuclei and cells, with interlacing fibres. The nerve-fibres seem entirely absent, but besides the cellular elements, there are amorphous pigment granules, and amyloid bodies. The vessels course through the mass, the outer boundaries of which it is not easy to determine. In the *West Riding Asylum Reports*, 1874, Dr. Herbert C. Major records the appearances observed by him in cases of senile dementia, from which he concludes that in such cases the nerve-cells throughout the entire depth of the cortical substance and in all parts of the brain are morbidly affected in a variable degree. In the large “cells” the process is for the most part one of “granular degeneration,” while

in the small "cells" simple atrophy generally, without granular degeneration, takes place. The nuclei of the cells invariably participate in the diseased action, becoming granular, and finally destroyed. At an early period of the disease the branches of the large cells become atrophied and destroyed, but exceptionally they remain intact until the morbid condition is far advanced. In some cases, not only of senile atrophy, but also of general paralysis, &c., many of the large pyramidal cells become by a peculiar transformation "hypertrophied" (Tuke Rutherford), or "inflated" (Major); but this condition is exceptional (I have observed its occurrence in a case of dementia of many years standing, where the patient had been hemiplegic for some time). The vessels are generally dilated, and the neuroglia in a state of atrophy and degeneration.

In the *Journal of Mental Science*, July, 1875, the same author has a note on the appearances observed by him in the brain of a sane man who had died from a compound fracture of the leg nine days after the accident. Many of the large pyramidal nerve-cells of the deeper layers of the cortex were affected with an accumulation of yellow granules in their interior, in no case going so far as to produce destruction of the nucleus or nucleolus, and in most cases only leading to a slight alteration in the contour of the vessel. At the posterior extremity of the occipital lobe the cells, with rare exceptions, presented no evidence of any morbid process. From these appearances Dr. Major impresses the necessity for caution in connecting histological changes in the brain after death with mental phenomena existing during life, and adds that it further illustrates a fact he had before called attention to, viz., that the nerve-cells of the occipital lobe are the last, as they are the least affected by the atrophic process.

In the January and October numbers of the *Journal of Mental Science*, Dr. Batty Tuke describes and figures the appearances seen in a case where the mental symptoms were due to syphilis. The arteries were more or less thickened as to their muscular coats, and more especially as to their outer fibrous tunic; the latter he figures surrounding the vessels in concentric rings for a very considerable extent, and it appears to be cemented by a viscous gummatous material, in which are occasionally seen amyloid bodies. The effect of this thickening is to completely occlude the vessels in many instances, and in all very materially to alter their calibre; in addition local softenings were found sufficient to account most satisfactorily for a long series of physical symptoms, and the

external arteries were most markedly affected by an advanced syphilitic atheroma. These appearances agree with the observations of Dr. Gray in similar cases which have been already mentioned. Dr. T. S. Clouston (*Edin. Med. Journal*, July, 1875), in a paper on two cases of brain tumours, one of which was syphilitic, describes similar appearances in the vessels in that case. He says:—"The syphilitic deposit scattered through the brain substance affected the arteries in every possible way, by squeezing, and so shutting them up, by thickening their coats, and lastly by getting inside them and developing there." Heubner (*Syphilitic Disorders of the Arteries of the Brain*, quoted in the *Chicago Journal of Mental and Nervous Disease*, April, 1875), as the result of his observations and investigations, arrives at the following conclusions on this subject:—1st. That in a number of cases the syphilitic growth either invests the affected arteries, or lies in contact with their walls, producing compression and thrombosis of its canal, or involving its walls in the disease either at the point of contact or in its course. 2nd. That in others the syphilitic growth does not stand in any close relation to the diseased arteries, even being at contrary sides of the brain; in these cases the question arises whether the degeneration, change of texture, accumulation of deposit on the inner surface of their walls, obliterating them more or less completely, are due to atheroma, and not to syphilis; but after reading the discussion of Heubner, there can be little, if any, doubt that the cases cited are truly syphilitic. 3rd. That in by far the larger number of cases no specific changes were found within the cavity of the skull, such as cheesy deposits, gummata, &c., but in which there was softening or inflammation and circumscribed changes in the arteries. The general lesions found were thickening and degeneration of the walls of the arteries, proliferation of the tissues of the middle coat, so as to produce swelling inwards of the wall, contracting the lumen; chalky and other deposits in the walls of the vessels, thrombosis, softening of the brain substance in the region of the affected arteries, &c. Dr. J. J. Brown (*Journal of Mental Science*, July, 1875), describes the condition of the vessels found by him in an undoubted case of syphilitic insanity; the muscular coat of the arteries was greatly hypertrophied, the outer coat thickened, and in and around this coat was a molecular deposit, in many cases filling up the perivascular spaces. At some parts of the section the vessels were patent, and contained blood corpuscles; others were completely

closed, and presented the appearance of concentric rings, in the centre of a molecular or granular mass, while some presented the appearance of what has been figured by Dr. Batty Tuke as characteristic of syphilitic insanity, though in a minor degree. In some places an altogether different kind of occlusion of the small arteries was observed, viz., an embolismic filling up of their calibre with a dark hard substance, broken up into lengths and looking like some kinds of hair that have black pigment cores cut up into little bits by clear transverse striæ. (In sections I recently prepared from a case where, although there was no direct evidence of syphilis, yet from the history it might be suspected, blocking of the vessels is well seen, especially in sections through the pons and optic thalami, the vessels are seen completely filled with a material highly coloured by carmine, and completely fused with the walls. No lamination, however, is apparent, and the vessels are surrounded by dilated perivascular spaces, quite empty, the borders of which are granular, and scattered around are large oval and fusiform nuclei.) Drs. Steadman and Edes also report a case (*American Journal of Medical Science*, April, 1875), the patient having been under treatment for various well-marked syphilitic symptoms for a protracted period, eventually died. Besides other characteristic appearances in the brain, the minute arteries were observed to be in the following condition: the muscular coat appeared healthy; outside this were a number of cell-like bodies, either replacing the adventitia, or greatly increasing its thickness. Within the muscular coat the tunica intima was much thickened, the fibres running in parallel layers, and in this tissue were circular spaces or cells, which were most numerous at the edge of the lumen of the vessel. Where this coat was most increased the calibre of the vessels was reduced to about one-fourth of its normal diameter.

This obliterative thickening of the arterioles of the brain, the result of syphilis, is, as Dr. Batty Tuke observes (*Edin. Med. Journal*, March, 1875), most interesting when viewed by the light of the observations of Edmansson and Fränkel on the condition of the arteries of the villi of the syphilitic placenta. These authors hold that in the placenta the thickening appears on the outer layer of the intima, and extends outwards and inwards until the calibre of the vessel is obliterated (a conclusion recently disputed, I believe, by Mr. Lawson Tait, who considers the change to be conservative, and similar to the changes taking place in the vessels of the kidney described by Dr. George Johnson). The principal points of

difference between the syphilitic changes in the arteries of the brain thus observed and corresponding atheromatous changes are thus summarised by Heubner:—1. Difference as to the duration of the period of development, the former (syphilitic) has often quite a short period, say a few months, while the period of the latter (atheromatous) is either unknown or very long, say many years. 2. Then, again, in the beginning of atheromatous disease, the vessel is usually enlarged at the seat of the disorder, while the opposite condition prevails with syphilitic disease of the vessels. 3. The atheromatous affection is more diffused, or involves, as a rule, larger areas of a vessel than is the case with the syphilitic, which is often sharply limited to small spots in the vessel. 4. The atheromatous and other related chronic arterial changes, especially as seen in old people, have, unlike the syphilitic affection, less the character of neoplastic formations than of hypertrophies. 5. The presence of fat granules, and even of large fat cells in abundance, in most forms of such diseases as atheroma, &c., and their absence in the syphilitic affection. The author also describes the microscopical differences between the two affections, which cannot here be noticed.

Dr. Adler (*Archiv. f. Psychiat. u. Nervenkr.*, Vol. I., 1874) publishes a paper on granular cells in the spinal cord of the insane, from which the following conclusions have been abstracted (*Chicago Journal*, April, 1875):—1. The granular cells in the spinal cord of the insane are found preferably in the connective tissue of the septa, the radiations of which they follow in the nerve tissue, being found most abundantly in the septa themselves. 2. The extension of these cells in the cord, since they are found with the vascular septa, follows the course of the vessels in a horizontal as well as in a vertical direction.

IV. *Points connected with the Treatment of Insanity.*—As regards the treatment of mental disorder, advances keeping pace with those in other departments of psychological medicine have not been made; we can only hope that as our knowledge of the physiology and pathology of these hitherto mysterious and obscure diseases becomes consolidated, so will we be able to adopt more rational methods of treatment, and apply them with greater prospects of success. In the *Journal of Psychological Medicine*, April, 1875, M. Brierre de Boismont describes his method of treating melancholia, a form of mental malady of very frequent occurrence.

Amongst the therapeutical agents which he employs may be mentioned prolonged baths, with or without irrigations, lasting from one to two, three, four, or even five hours, when the malady is recent. If symptoms of dementia accompany the melancholia, then the half warm bath, with cold affusions by sprinkling (*en arrosoir*), or in the form of the shower or douche (*en pluie*), is often beneficial. Of 198 cases who recovered under his care in a period of twenty years, nearly all received great benefit from the baths, many recovering very rapidly under their influence. It is often indispensable to use purgatives in addition to the baths, but the drugs must be disguised, because melancholic patients very frequently imagine they are being poisoned, and obstinately resist their administration. Tonics, chalybeates, and quinine are also of great service.

Ergot of Rye in the Treatment of Insanity.—Dr. E. C. Mann (*New York Med. Rec.*, abstracted in *London Med. Rec.*, Aug. 16th, 1875) gives an account of the use of this drug in asylum practice. Dr. J. C. Browne some years ago was the first who made use of it in the treatment of mental disorder, believing that it would contract the vessels of the brain in a similar manner to those of the spinal cord, as it had been proved to do by Brown-Séquard. Dr. J. C. Browne found that three forms of mental disorder—viz., recurrent mania, chronic mania, and especially epileptic mania, in all of which we find that the lesion consists essentially in cerebral hyperæmia, although the symptoms in each differ—were particularly amenable to its influence, and in epileptic mania its combination with bromide of sodium materially aids in widening the interval between the fits, and in modifying the attacks when they occur. A thorough trial of the ergot treatment has satisfied Dr. Mann of its efficacy in these cases.

Nitrite of Amyl.—In the *Berliner Klinische Wochenschrift*, abstracted in the *Lond. Med. Rec.*, Aug. 16th, 1875, M. Samelsohn discusses the physiological action and therapeutical uses of nitrite of amyl. He considers that we are still ignorant of the precise mode in which it produces dilatation of the small arteries. On the one hand, Brunton, Pick, and Schüller agree in believing that its action is peripheral; while Bernheim finds that when the arterioles are dilated by the nitrite they may be made to contract by electric stimulation of the corresponding vaso-motor trunks, from which he infers that the action of the drug is primarily central. The author says that, even granting the experiments upon which

these theories are founded to be correct, still he disputes the conclusions drawn from them, alleging that we do not know what becomes of the nitrite in the blood, and that its effects may be possibly indirect, and due to some product of its decomposition. Our ignorance, he adds, on these points ought to make us cautious in using it; and he details a case where its administration was followed by very dangerous effects. Dr. M'Bride (*Chicago Journal of Mental and Nervous Disease*, April, 1875) records experiments on the use of the drug, performed by himself and Dr. Kempster, at the Oshkosh Asylum, Wisconsin, U.S. Portions of the skull were removed from small animals, and the amyl administered by inhalation. With the aid of a strong lens the vessels of the pia mater were seen to gradually enlarge; the brain seemed to become too large for the cranial cavity, and protruded, black with congestion, through the opening in the skull, and repetition served to confirm these results. The author reports six cases where the nitrite was administered to insane epileptics with the effect of cutting short the fits and prolonging the period of their return. Those cases of epilepsy in which there is a distinct aura are the cases in which the drug promises to be of most service. The dose is from ten to fifteen drops, placed upon a piece of cotton, and taken by inhalation. When the aura is felt, the amyl should be inhaled, and in this way the convulsions can usually be prevented. The dose should be increased until the desired effect is obtained.

The Hypodermic Injection of Morphia in Insanity.—In a paper read before the Psychological Section of the British Medical Association, Dr. M'Diarmid described his experience of this method of using the drug. The usefulness of the hypodermic injection of morphia in insanity was commented upon, and its use in melancholia, acute mania, recurrent mania, chronic mania, and general paralysis was illustrated by cases. The habits of filthy demented were improved under the hypodermic treatment. There was delayed action in some patients. Constipation was not caused by this method of giving morphia. Vomiting after subcutaneous injection was not frequent. Hypodermic injection of morphia was not suitable in cases of maniacs suffering from heart disease. The use of atropia in combination with morphia subcutaneously was described, and also the doses of morphia required in the various forms of insanity. The results obtained by this method were compared with those of cannabis Indica, chloral, bromide of potassium, and opium and morphia by the mouth. In the discussion which followed,

Dr. Clouston said that his observations on the drug were not in accordance with Dr. M'Diarmid's—the great majority of the patients to whom he had administered it experimentally lost weight and appetite; and, on the whole, the results of his experiments, in relation to the action of morphia on insane patients, were such that he had almost uniformly discontinued its use. Dr. M'Diarmid attributed this to the fact that Dr. Clouston had given about three times as much morphia as he had done in the experiments which he had conducted.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-EIGHTH ANNUAL SESSION.

Saturday, 10th July, 1876.

LOMBE ATTHILL, M.D., President, in the Chair.

On the History and Use of the Short Straight Midwifery Forceps as a Tractor, and of the Long Double Curved Forceps as a Compressor and Lever. By THOMAS MORE MADDEN, M.D., M.R.I.A.; lately Examiner in Midwifery in the Queen's University in Ireland; Physician to St. Joseph's Hospital for Sick Children; Ex-Assistant Physician to the Dublin Lying-in Hospital; Corresponding Fellow of the Obstetrical Society of Edinburgh and of the Gynæcological Society of Boston, &c.

WITHIN the last few years the midwifery forceps has once more come into frequent use, after a long period of obstetric darkness, during which even the most eminent accoucheurs, being ignorant of the value of this instrument, or incapable of applying it, resorted to craniotomy whenever the natural efforts failed to accomplish delivery in cases of difficult labour. A great advance had been already made in this respect before I first became a student of midwifery, and "cold steel for the child, followed by mercury for the mother," was no longer the rule of practice in such cases. Still, even then the aphorism inculcated in the lecture-room, and acted upon at the bed-side, was that urgent necessity alone warranted any instrumental interference with labour, and the cases in which this necessity was held to exist were comparatively few and far between. The forceps was seldom applied without a consultation, and very rarely indeed until the os uteri had been for some time fully dilated. But now *nous avons changé tout cela*—the forceps is used as freely as the catheter, and instrumental delivery promises to become soon the rule, and natural labour almost the exception.

This transition from complete neglect to habitual use is merely an additional instance of those strange reactions in opinion and in practice of which the history of our profession presents so many remarkable examples. The judicious use of the forceps, by which living children may be safely delivered from living mothers in cases which might terminate fatally to either without its assistance, has been justly described as the greatest triumph of our art. For my own part, I have long endeavoured, by my "Lectures" and other writings, to contribute to the more frequent and timely employment of the short straight forceps. But if this, or any other forceps, be resorted to, as some have recommended, in almost every case of labour, the inevitable result will again be its exclusion for another period from its proper place in midwifery practice. And, therefore, it especially concerns those who advocate the timely and judicious use of this instrument to deprecate its premature or unnecessary application.

These extreme practices have never been sanctioned by the Dublin School of Midwifery; but recently certain views in favour of the very early and frequent use of the forceps have been brought forward by obstetricians of high eminence and great experience, in whose hands this has undoubtedly proved very successful. However, as this practice, if largely followed by others less expert, would probably have different results, since the great majority of practitioners cannot possibly have opportunities for acquiring that special operative dexterity which alone can ever render it safe or facile, it should not be adopted as a general rule without careful consideration. Therefore, in the hope of eliciting the opinion and experience of the Dublin Obstetrical Society on a question of much practical importance, I now submit an account of my use of the forceps in a large number of cases, and of certain modifications which I consider as improvements in the long and short forceps, together with some preliminary observations on the history of these instruments and the circumstances under which they should be resorted to.

The history of the invention of the midwifery forceps, the strange desuetude into which it fell for many years, and its reintroduction into modern practice, form one of the most interesting chapters in the annals of medical discovery, and convey a lesson, the practical application of which to the present time has been too generally lost sight of, owing to the prevailing neglect of ancient medical literature. "The mental disease of the present day," says Johnson (and the observation is surely more applicable now than when penned, one hundred and thirty years ago), "is impatience of study, contempt of the great masters of ancient wisdom, and a disposition to rely wholly on unassisted genius and natural sagacity. If no use is to be made of the labours of past ages, the world must remain always in the infancy of knowledge. The discoveries of every man must terminate in his own advantage, and the studies of

every age be employed on questions which the past generation had discussed and determined."

I have elsewhere enlarged on this subject, and have shown in two recent papers* that some of our most valued improvements in gynæcology and surgery—such, for instance, as the dilatation of the os uteri by sponge tents, the local application of nitric acid in uterine diseases, the use of the vaginal speculum, and the employment of anæsthetics before surgical operations—are all instances of the revival of old and disused practices as modern discoveries and improvements. The same history applies to the midwifery forceps, and even the very discussion we are now engaged on as to its proper use has been anticipated upwards of a century ago:—

"For out of the olde feldis, as men saieih,
Comith all this newe corne, fro yere to yere;
And out of olde bokis, in good faith,
Comith all this newe science, that men lere."

Most writers who have treated of the history of the forceps since 1794, when Mulders' "*Historia Literaria et Critica Forcipium et Vectium*" was published, appear to have taken not only their narrative, but also their quotations, at second-hand from this work, of which, therefore, I have not availed myself, but have compiled the following sketch of the history of this instrument, and taken my citations as far as possible from the original authorities.

The invention of the forceps is generally ascribed to the elder Chamberlen, whose family monopolised the obstetric practice of London for three-quarters of a century. Even Dr. Churchill acquiesces in the common opinion. "There can now be no doubt," he says, "of the credit of the invention being due to Dr. Paul Chamberlen, and I think I have shown that there is presumptive proof that it took place before the year 1654."† Having, however, devoted a good deal of attention to this question, it appears to me that the only merit the Chamberlens are entitled to is that of improving an old and less perfect instrument, designed for the same purpose, and described in works with which Dr. Paul Chamberlen, who lived at a time when medical literature was circulated in a language common to the learned in all countries, could hardly have failed to be conversant.

The forceps is not mentioned by any of the known Greek or Roman medical writers, whose obstetric knowledge, however, with the exception of Celsus, was extremely limited. For midwifery was then almost exclusively confined to female practitioners, the higher class of whom, the *Medicæ*, or *iatricai*, were entirely distinct from the *Obstetrices*, or *μαῖαι*,

* On the Probable Employment of Anæsthetics in Surgical Practice in Ancient Times. By Thomas More Madden, M.D. Dublin Medical Journal, Dec., 1874.

† Researches on Operative Midwifery. By Fleetwood Churchill, M.D. P. 111. Dublin: 1843.

as the mere midwives were called, and appear to have corresponded very closely to the "lady-doctors" of the present day, and we have evidence that the forceps, or something of the same kind, intended for the same purpose, was not unknown to the latter at least eighteen hundred years ago, in the discovery of a similar instrument in the house of a Roman obstetrix in the excavations at Pompeii.*

The first known reference to the forceps is that of Avicenna, the Arabian physician of the tenth century, whose works were translated into Latin, and published at Basle, in 1556, by Andrew Alpago, from whose edition I have taken the following chapter, in which the author refers distinctly to the use of the forceps for the delivery of living children in cases of difficult labour, and makes this more evident by going on to direct that, in case the midwife fails with the forceps, she must then resort to embryotomy, as in the case of a dead child:—"Cap. 26. De Regimine ejus cujus partus sit difficilis causâ magnitudinis fœtus—Oportet obstetrix bona faciat retentione hujusmodi fœtus: quare subtiliter in extractione ejus paulatim; tunc si valeat illud in eo, bene est; et se non liget eum cum margine panni, et trahat eum subtiliter attractione post attractionem. Quod si illud non conferet, administrentur forcipes, et extrahatur cum eis. Si vero non confert illud, extrahatur cum incisione, secundum quod facile sit, et regatur regimine fœtus mortui."†

A century after the time we find two midwifery instruments, which, in the Latin version, are mentioned as "Forcipes," were described by Albucasis—i.e., the long forceps, or *Almisdach*, and the short forceps, or *Misdach*; but these instruments, from their construction, were obviously not intended for the extraction of a living child, and hence may be dismissed without further consideration.

The directions of Avicenna as to the use of the forceps were repeated by Mercurialis, a writer of the sixteenth century, whose treatise, "*De Morbis Muliebribus*," was reprinted by Spachius in 1597. In this work he says:—"When the labour is rendered difficult by the size of the child Avicenna gives the following rules—'Prima est ut obstetrix tenent manibus educere. Si vero manibus no potest, fascia circumligetur fœtus corpus, atque ita paulatim educatur. Si vero hoc non succedat habent obstetrices quædam tenacula quibus circumligant pannos ne lædant vel offendant fœtam iisque educant.'"‡

Jacobus Rueff, in his treatise, "*De Conceptu et Generationis Hominis*," published at Zurich in 1524, and also reprinted in Spachius' collection—

* Adams. Translation of Paulus Ægineta. Vol. I., p. 652.

† Avicennæ Medicorum Arabum Principis, Libres Canonis de Medicinis, Cordialibus et Cantica jam olim quidem a Gerardo Carmonensi ex Arabico sermone in Latinum conversa et partia vero ab Andrea Alpago infinitis penecorrectionibus, &c. P. 724. Basile: 1556.

‡ Mercurialis in Spachius' Gynæciorum, &c. P. 237. 1597.

"Gynæciorium Grecorum Arabum Latinorum, Veterum et Recentium, &c. Opera et Studio Israelis Spachii Med. D. Fol. Argentinae, 1597"—describes and gives an engraving of a midwifery forceps—"In hoc casu si postulaverit necessitas, huic instrumento forcipem qua dentes eruuntur adhibeas, vel depictam hinc forcipem longam et tersam, qua ita utatur commode, ut si possibile sit, id quod protrahendum est, educat faciliter."^a

The earliest English reference to the use of any instrument, apparently for the same purpose as the vectis, is contained in James Cook's "*Mellificum Chirurgiæ, or Marrow of Chirurgery*," the first edition of which was published in 1647, and is quoted in Dr. Aveling's interesting "*Biographical Sketches of British Obstetricians*," in the *Obstetrical Journal* for October, 1873—"Being commanded by the Lady Dowager Brook to wait on her to London, to take the consult of physicians, in the way before we came to Tossiter, we met with the tidings of that fatal fire of London, which caused her Honour to resolve for Hackney. After some time of her being there I was desired by Mrs. Hatton to go visit one near her time of her first child, who was aged. She begged of me to come to her if there was need. I told her there were several men abler than myself, and fitted with instruments which I wanted, that might be had from the city (he, doubtless, here, says Dr. Aveling, refers to Paul Chamberlen). After two or three days, in the night she sent for me. I being very much indisposed and the night tempestuous, I denied; but, being very much importuned by a gentlewoman, I went. When come, I made trial, and found the child came right, but without advantage, though pains were strong. I made use of what came next my thought, getting it a little better fitted at a smith's shop hard by, with which I brought away the child, though with much difficulty."

The forceps of Avicenna, like those of Jacobus Rueff, were small and imperfect instruments, the opposite blades being united by a fixed point, and therefore necessarily introduced into the vagina together, and there opened to catch hold of the head of the child, *si possibile sit*! This same malconstruction occurs in Chamberlen's first forceps, which was exhibited by Dr. McClintock at the last meeting of this Society, and is merely an enlarged copy, with fenestrated blades, of the "*forcipes longa et tersa*," described by Rueff in 1524. In Chamberlen's second forceps we find that he had discovered the inconvenience of the fixed point, and I think the only credit he deserves is that of opening and enlarging the blades, and doing away with this articulation. Even on their own showing, none of the Chamberlens, from Dr. Paul, the supposed inventor, down to Dr. Hugh, the translator of Mauriceau's work, are entitled to any gratitude from posterity for their boasted discovery of an instrument professedly designed to save life and relieve suffering, but which they sordidly kept a close secret for their own aggrandisement.

^a Jacobus Rueff. *De Conceptu, &c.*, in Spachius' *Gynæciorium*. P. 179.

Up to the time when the last, the sixth, edition of his translation of Mauriceau's first volume was published, in 1715, Dr. Hugh Chamberlen still retained his secret. "My father, brother, and myself (though none else in Europe as I know), have, by God's blessing and our own industry, attained to and long practiced a way to deliver women in this case without any prejudice to them or their infant, though all others (being obliged, for want of such an expedient, to use the common way) do, and must, endanger, if not destroy, one or both with hooks."

Some years ago the late Dr. M'Keever, who has very recently passed away from amongst us, with all his faculties unimpaired by advanced age, and who was long distinguished as an obstetric writer and practitioner, presented me, amongst other papers, with the manuscript now shown, which contains a version of the history of Chamberlen's failure with the forceps in his Paris case, as related in the earliest Lectures delivered in Edinburgh on midwifery. The first Professor of this subject in that University was Dr. Gibson, who was appointed in 1736, but died before entering on his professorial duties, being succeeded by Dr. Young, of whose unpublished lectures the manuscript is now before the Society. Dr. Young's account is evidently founded on Mauriceau's, from which it only differs in saying that, "The woman died under his hands undelivered, upon which he quitted Paris without selling his secret. This afterwards turned out to be the forceps, as we learn from Chapman, the material thing in whose book is the discovery of that noble instrument, the forceps, which has saved the lives of thousands that otherwise must have been lost. The next writer is Giffard, who practised about the same time with Chapman, and it was he that introduced the frequent use of the forceps, and who perhaps had more practice with them than any of his predecessors, or even successors. . . Chapman only delivered six, and these with one single blade of the forceps. This single blade is what is called Roonheysen's secret, and in Holland none are allowed to practice midwifery without being instructed how to use this single blade by the professor appointed for that purpose."*

The foregoing account of the introduction of the forceps into practice differs somewhat from that given in another manuscript, also in my possession, containing the unpublished lectures on midwifery delivered in Edinburgh in 1776 by Professor Hamilton. In the latter it is erroneously stated that before attempting to use the forceps in his celebrated Paris case, Chamberlen had obtained a thousand pounds from the French Government for divulging his secret. "This sum," says Dr. Hamilton, "was readily granted, and he was called to the next laborious case that occurred, but in this he was foiled, and Mauriceau afterwards delivered the woman by opening the child's head, but the woman died, as Mauriceau mentions, from the instrument of the English operator

* Dr. Young's Manuscript Lectures.

wounding the uterus in several places. Chamberlen left Paris and came home by Holland, and it is said there showed the forceps to Roonheysen; this, however is disputed, but most certainly it was not known at Paris for a long time after—not, I believe, till 1734. Most certainly it was not known at the time that Palphyn came to Paris to publish his system of surgery. . . . After Chamberlen, Chapman improved them, but very little. Both his and Chamberlen's were straight, by which they could not be worked with without the handles injuring the woman very much behind. Levret introduced a curved pair. Freke armed his with a crochet at one end and a blunt hook at the other, by which the practitioner went about armed at all points. Freke's instrument is too long; however, it is used to this day all over the Continent, with a very slight alteration. Smellie, who had a very considerable mechanical turn, improved the forceps most. He first constructed a wooden pair, but he found this so difficult of application that he soon gave it up, and had a steel pair made. Dr. Wallace Johnston next improved the forceps; he added the curve of Levret; he increased the breadth of the blades and diminished the weight of the instrument. The London practitioners are every day inventing new ones, but are in no degree superior to this. After all that has been said about the forceps, I may now remark that a man who has been used to deliver with instruments may deliver with the shafts of a couple of spoons; yet young practitioners find considerable difficulty in delivering with the modern forceps.”*

The case in which Chamberlen failed to effect delivery with his forceps in Paris, even as narrated by Mauriceau, reflects more credit on the English than on the French accoucheur—the latter left the woman to die undelivered, the former at least attempted to assist her:—“On the 19th of August, 1670,” says Mauriceau, “I saw a small woman, aged thirty-eight, who had been in labour of her first child for eight days. The waters escaped on the first day without hardly any dilatation of the os. Remaining in this condition until the fourth day, I was sent for, and recommended the midwife to bleed her; and in case this did not produce the effect I hoped, to administer an infusion of senna to excite pains, which she had not; this was done the following day, and succeeded in causing pains, by which the mouth of the womb was dilated as far as possible. Nevertheless, I could not deliver, and the child had remained in the same situation, without being able to advance, for this woman was so small, and the bones (of the pelvis) so narrow and close to each other, and the sacrum so curved forwards, that it was quite impossible to introduce the hand to deliver her, although mine is small enough, . . . or to introduce the fingers sufficiently to enable me to use a crochet safely, so as to extract the child, which had been apparently dead for

* Dr. Hamilton's Manuscript Lectures. Vol. I., p. 223.

about four days. I declared the impossibility of delivering this woman to my assistants, who, being well persuaded of this, prayed me to perform the Cæsarean operation, which I would not undertake, knowing well that it was always certainly fatal to the mother. But *after* I had left the woman in this condition, it not being possible for me to help her as I would any other of a more normal conformation of body, there came shortly afterwards an English physician named Chamberlen, who was then in Paris, and who, from father to son, made a profession of midwifery in England, in the town of London, where he thus acquired the highest reputation in that art. This physician finding the woman in the condition just stated, and learning that I had not found any possibility of delivering her, declared himself astonished that I could not do so. *Moy* (says Mauriceau, with all a Frenchman's untranslatable vanity), *qu'il disoit assuroit estre le plus habile homme de ma profession qui fort à Paris* ; notwithstanding which he at once promised to deliver her most assuredly in less than half a quarter of an hour, whatever difficulty he might find. Accordingly, he immediately applied himself to the business, and in place of half a quarter of an hour, he worked for more than three entire hours without cessation, except to take breath. But having vainly exerted all his strength, as well as all his industry, and seeing that the poor woman was almost dead in his hands, he was obliged to abandon the attempt and to allow that he could not accomplish it, as I had well declared. This poor woman died undelivered twenty-four hours after the violence he had done her, and at the examination I made in performing after her death the Cæsarean operation, which I would not do before, as I have said, I found the child and everything else as I had before stated, and the womb all torn and pierced through in several places by the instruments which this physician had blindly used without the controul of his hand, which being a size larger than mine, he did not seem to have been able to introduce sufficiently far so as to preserve it." Mauriceau then goes on with great complacency to observe that the English physician, who had come six months previously to Paris in the hope of making his fortune, had circulated a report that he had a *secret (tout particulier)* for such cases, and vaunted that he could thus deliver in even the most desperate and otherwise hopeless cases in less than half a quarter of an hour, and had even proposed to the First Physician to the King that for a reward of ten thousand crowns he would disclose his pretended secret. "*Mais le seule experience de ce fâcheux accouchement le degôta tellement de ce pais-ci, qu'il s'en retourna peu de jours en suite au Angleterre ; voyant bien qu'il y a Paris de plus habile gens en l'art des accouchemens que lui.*" But before leaving Paris Chamberlen called on Mauriceau, and after various compliments had passed between them, the latter thus concludes his account of the visit:—"Je reçus son compliment comme je devois lui faisant

entendre qu'il s'était bien trompé en croyant trouver autant de facilité à accoucher les femmes à Paris, comme il avoit pu trouver à Londres ou il retourna le lendemain emportant avec lui un exemplaire de mon livre; qu'il fit imprimer après l'avoir traduit en Anglais en l'année 1672, depuis laquelle traduction il s'est acquis un si haut degré de réputation dans l'art des accouchemens dans la ville de Londres, qu'il y a gagné plus de trente mille livres de rente, qu'il possède présentement."*

Amongst the writers who took part in the introduction into midwifery practice of instruments intended for the same purpose as the forceps, a prominent place must be assigned to M. Jean Palfyn, of Ghent. In 1708 Palfyn published at Leyden an anatomical continuation of Mauriceau's work;^b and twelve years later, being at Paris bringing out a new edition of his book, he presented to the French Academy of Sciences what he termed his *tire-tête*—a kind of extracting forceps the handles of which did not cross, but were simply connected together by a ligature.

Although Chamberlen and, in a lesser degree, Chapman have generally been given the credit of introducing the forceps into English midwifery practice, the first who avowedly employed and recommended the use of this instrument was Mr. William Giffard, surgeon and man-midwife, who died before Chapman's book appeared. Giffard appears to have used his "Extractor," as he calls it, almost as freely as any modern accoucheur does the forceps, and moreover, anticipated Smellie's plan of dilating the os uteri to apply this instrument, which has been again recently revived. I am indebted to the kindness of Dr. McClinton for the opportunity of referring to this scarce work.

The first case in which Giffard employed his "extractor," or forceps, occurred on the 8th of April, 1726, the patient being the wife of one of the Prince of Wales' servants, and, owing probably to the inexperience and timidity of the operator, was unsuccessful. Two years subsequently he relates the first published case in which the forceps was successfully used for the delivery of a living child. This occurred on the 28th of June, 1728. The woman had been for many hours in "labour which was delayed by inertia; and having first administered a clyster and two cordial hypnotic draughts" at intervals of eight hours, he says:—"I then found the child but little advanced; her pulse was very quick and labouring, and the womb very much spread, so that I could entirely pass my fingers round the head to the ears, for it was no ways engaged, but

* Observations sur la Grossesse et l'Accouchemens des Femmes, &c. Par François Mauriceau, Ancien Prevost de la Compagnie des Maitres Chirurgiens de la ville de Paris. Observation XXVI., p. 25. Paris: 1715.

^b Description Anatomique des Parties de la Femme qui servent la generation, &c. Lequelles ouvrages ont peut considéré comme une suite de l'Accouchement des Femmes par M. Mauriceau. Par M. Jean Palfyn, Anatomiste et Chirurgien de la ville de Gand. Leide: 1708.

loose; wherefore, considering that her pulse grew languid, and that her strength decreased, I thought it advisable to attempt her delivery. I endeavoured to press the child back, that I might be able to turn and get the feet, but it was so locked at the shoulders that I was not able to move it, whereupon I passed my extractor and drew it with much difficulty forwards without the labia. . . . The child was born alive. This case proves that a child presenting right, but sticking in the passage, may be brought alive (I won't say always) without either the use of hooks, or lessening the head, contrary to the opinion of most former writers."*

Giffard occasionally narrates the history of more than one forceps case occurring in the same day as an ordinary matter. Thus, on the 17th of May, 1731, he met with two cases "where," he says, "I thought it advisable to lend my assisting hand." The first was a case where the head was for some hours impacted in the pelvis; and the second is a case—interesting at the present time, when the same practice is again recommended—of labour delayed by rigidity of the os, where he "was of opinion that the delivery ought to be immediately effected in respect both of the mother and of the child. . . . But as the os internum was not so fully dilated as readily to admit the passage of the head through it, I strove to stretch and widen it by putting the ends of my fingers between it and the child's head, and, by this method, made way for the more easily passing of the instrument, without bruising or tearing the parts."^b

To Edward Chapman is due the credit of first making Chamberlen's secret known to the profession, as well as of improving its construction by substituting hard for soft metal, and disusing the riveted lock still retained in some French and American forceps. In his "Treatise on the Improvement of Midwifery," published in 1733, Chapman states that difficult labours, where the head lies low, can only be accomplished by either the fillet or by the forceps. "As to the forceps," he says, "which, I think, no person has yet any more than barely mentioned, it is a noble instrument, to which many now living owe their lives, as I can assert from my own knowledge and long successful practice."

The frequent use into which the forceps came as soon as it was known is evinced by numberless contemporaneous authorities; but by none more clearly than by the author of a letter addressed to Chapman, and published in the third edition of his book. "All I can say," reiterates Chapman, "in praise of this noble instrument must necessarily fall short of what it justly demands. The following letter was sent to me by a gentleman who had been recommended to me for information in this

* Cases in Midwifery, written by the late Mr. William Giffard, Surgeon and Man-midwife. Revised by Edward Hody, M.D. P. 49. London: 1734.

^b Ibid, P. 459.

art, and has long practised with great success and applause:—‘Sir, if you please to remember, about a week after I came into the country, I acquainted you that I was called to a woman in labour, where the child presented with the head far advanced in the vagina, with the os uteri extending. I delivered her with the forceps, and neither the mother nor the child received the least injury. Since that time I am come into such credit, that I am frequently called in twice or thrice a week; and, I thank God, I have not, as yet, met with the least mishap. Our midwives here are pretty dexterous, but when the head falls so low as to require the use of the forceps, they are at a loss. I have had two cases where I was obliged to deliver feetways, the heads of the infants not offering directly right for the instrument. *All the rest I delivered with the forceps.*—Yours, &c., John Paget. Lullworth, Oct. 30th, 1734.’”^a

The years 1733 and 1734 are memorable in the history of the forceps, for not only were Giffard’s and Chapman’s works then published, but, at the same time, Mr. Alexander Butter, Surgeon in Edinburgh, communicated to a Society in that city—“The description of a forceps for extracting children by the head, when lodged low in the pelvis of the mother.” “The forceps,” he says, “for taking hold of a child’s head when it has fallen so far down among the bones of the pelvis that it cannot be pushed back again into the uterus, to be extracted by the feet, and when it seems to make no advances to the birth by the throes of the mother, is scarce known in this country; though Chapman tells us it was long made use of. by Dr. Chamberlen, who kept the form of it a secret, as Mr. Chapman also does. I believe, therefore, that a sight of such an instrument—*which I had from Mr. Duse, who practices midwifery at Paris, and who believes it to be his own invention*—would not be unacceptable to you, and the publication of a picture of it may be of use to some of your own readers.”^b

In 1742 the use of the long forceps, which appears to have been even then “in general use all over Europe,” was described by Mr. (afterwards Sir) Fielding Ould, who succeeded Dr. Mosse as the second Master of the Dublin Lying-in Hospital. Ould’s work is very interesting, as it contains clear directions for the performance of version as a substitute for craniotomy in certain cases of obstructed labour, for the proposal of which the late Sir James Simpson obtained so much credit a hundred years afterwards. Mr. Ould also forestalled a suggestion made a few years ago by the late Dr. Beatty for preventing impending laceration of the perinæum and recto-vaginal septum during labour by incising the perinæum. But on the subject of the forceps Ould merely repeats

^a A Treatise on the Improvement of Midwifery. By Edward Chapman, Surgeon. Third Edition, p. 89. London: 1759.

^b Medical Essays and Observations. Published by a Society in Edinburgh. P. 321. Edinburgh: 1735.

the directions of former writers. Speaking of labours delayed by disproportion or inertia, where the child is living, "or, rather, if there be not a certainty of its death, in this case," he says, "the best adapted instrument is the long forceps, which is in general use all over Europe, wherefore it needs no particular description. . . . Being thus provided, we proceed to the operation by placing the woman on her knees, &c."* Immediately after its publication, Ould's work was unsparingly attacked by a rival Dublin accoucheur, Dr. Southwell,^b who printed two pamphlets on the subject—one in Dublin, and the other shortly afterwards in London. In the former he reproaches Ould with being "the youngest surgeon practising midwifery in this city; a man not conversant with authors, and, at best, but a novice in practice. . . . I shall only add, in general, Mr. Ould is totally ignorant of the regular use of instruments. He entirely mistakes the right use of the large forceps." ^c

In 1752 Dr. Smellie's Treatise, from which a new era in midwifery practice may be dated, was published. To Smellie we owe what were until very lately the best types of the short and long forceps, as well as the clearest directions for using them "on rational and mechanical principles." Nay, on comparing his writings with those of his successors for upwards of eighty years, we find that when, in the course of time, Smellie's teachings were supplanted by those of William Hunter, Osborne, and Denman, and even down to the date of Blundell's or Collins' works, midwifery retrograded; and only within the last thirty-five years has it regained the ground lost since Smellie's time, and has progressed as much beyond his practice as he had advanced beyond that of any of his predecessors.

The mode of effecting delivery with the forceps before the full dilatation of the os uteri was distinctly described by Smellie, who warns his readers that "in stretching the os externum or internum, we ought to imitate nature; for in practice we find that when they are opened slowly and at intervals by the membranes or by the child's head, the parts are seldom inflamed or lacerated. . . . We ought, therefore, when obliged to dilate those parts, to proceed in that slow and deliberate manner; and though, upon the first trial, they feel so rigid that one would imagine they could never yield or extend, yet, by stretching with the hand, and resting at intervals, we can frequently overcome the greatest resistance."^d

* *A Treatise of Midwifery. In Three Parts. By Fielding Ould, Man-midwife. P. 156. Dublin: 1742.*

^b *Remarks on some of the Errours in Anatomy and Practice in a late Treatise of Midwifery, published by Fielding Ould, Man-midwife. By Thomas Southwell, M.D. and Man-midwife. P. 41. Dublin: 1742.*

^c *A Continuation of Remarks on Mr. Ould's Midwifery. By Thomas Southwell, M.D. and Accoucheur. London: 1744.*

^d *Smellie's Midwifery. P. 159.*

The prudent caution which induced Smellie for many years to refrain from recommending or even showing his long forceps to his class was founded on reasons still applicable. "In order," he concludes, "to disable young practitioners from running such risks, and to free myself from the temptation to use too much force, I have always recommended the forceps so short in the handles that they cannot be used with such violence as will endanger the woman's life."^a And in his collection of cases he says:—"But if these expedients be used prematurely, when the nature of the case does not absolutely require such assistance, the mischief that will ensue will often overbalance the service for which they are intended. I did not then recommend the use of them (the long forceps), because I was afraid of encouraging young practitioners to exert too great force, and give their assistance too soon."^b

Hardly was Smellie's work published than its author's scholarship and style, and, still more, his practice with the forceps, were vehemently assailed by Dr. Burton, of York, whose portrait and obstetric armament have been immortalised by Sterne in "*Tristram Shandy*." "Great son of Philumnus, what can'st thou do? Thou has't come forth unarmed; thou has't left thy *tire-tête*, thy new invented forceps, thy *crochet*, thy *squirt*, and all thy instruments of deliverance behind thee." The "new invented forceps" referred to was an instrument somewhat like a crab's claw, recommended by Dr. Burton.

Dr. Burton's attack on Smellie, though virulent in the extreme, is evidently the work of a learned and able man. Its *animus* is sufficiently shown by the title—*i.e.*, "A Letter to William Smellie, M.D., containing Critical and Practical Remarks upon his Theory and Practice of Midwifery. By John Burton, M.D. Wherein the various gross mistakes and dangerous methods of practice mentioned and recommended by that author are fully demonstrated and generally corrected. London: 1753."

"To confound all nature," he says, "all distinctions of sex, to make animals vegetables, and the one and the same author two different persons, and neither character agree with the true one; to palm upon us an author that never existed; to pass over in silence several material things that contradict your own practice in those authors that are genuine, and to make them say things they never dreamed of, in order to countenance it, is such a piece of history as the present day cannot boast of; yet, strange as this may appear, you have done it. And if anything can be added to shock human faith, or prejudice your character as an historian or translator, it is your having converted *Lithopodii*

^a A Treatise on the Theory and Practice of Midwifery. By William Smellie, M.D. P. 162. London: 1752.

^b A Collection of Cases and Observations in Midwifery. By William Smellie, M.D. P. 4. Sixth Edition. Dublin: 1764.

Senonensis Icon, which you call *Lithopedus Senonensis*, an inanimate, petrified substance, into an author, after you had been six years cooking up your book.”^a

If Smellie's writings and practice were fiercely assailed, they were no less warmly vindicated by contemporary writers. Thus the Manuscript Lectures of Dr. Young, already noted, contain the following remarks:— “The great Dr. Smellie, ever to be held in esteem by all succeeding accoucheurs—men who ought to hold his memory in esteem have taken great liberties, and presume to find fault. But with regard to this matter I differ in opinion with the self-conceited blockheads who have not been able to produce anything equal to this good man. The second part contains one hundred pages on laborious births, where he gives full and explicit directions for using the forceps; and, forsooth, here again they find fault by saying he recommends their too frequent use. But every man of merit is the subject of envy to the ignorant and weak (I had almost said pettyfoggers of the profession). . . . And every unprejudiced person must allow him the merit of being the first who gave us a proper idea of using that noble instrument with ease and elegance, although they were in the hands of the Chamberlens, Chapman, and Giffard long before.”^b

“I knew him well,” says the anonymous author of a furious diatribe against the employment of men in midwifery practice, published in 1772, speaking of Dr. Smellie; “he was an honest man, and not only a faithful compiler of the doctrines and sentiments of other writers on the subject, but whatever he advanced as new and properly his own was founded on real facts and observation; and, what ought still more to recommend him and enforce his authority with those of his fraternity, he was an enthusiast in his profession; man-midwifery was the idol of his heart, and he believed in his forceps as firmly as he did in his Bible.”^c

A few years after its first introduction into English midwifery practice, we have evidence to show that the forceps had come into such general requisition, that its over-frequent employment, or misapplication, led to that wide-spread prejudice against its use, from the effects of which the practice of midwifery has only very recently been emancipated.

One of the most strenuous opponents of the forceps was the anonymous writer just quoted, whose attack is worth citing as indicating the frequency with which the forceps was employed upwards of a century ago, and pointing out the commencement and causes of the prejudice with which it was regarded for so many years, and which is not undeserving of special consideration at this time:—

“This instrument (the forceps) was, for some time, in the possession

^a Burton's Letter to Smellie. P. 1.

^b Dr. Young's Manuscript Lectures. P. 18.

^c The Present State of Midwifery Considered. P. 40. London: 1772.

of a few practitioners only, nor has it been publicly known above forty years. But as soon as it was made public, it is surprising with what avidity it was adopted, in so much that, for the first twenty years, the whole study of the men-midwives was how to new-model and improve its form and make, to delineate the various methods of using it, and to demonstrate in what a variety of situations and positions of the child it might be serviceable, till they, by degrees, found out that there could hardly occur a case in midwifery but where the forceps might be used with advantage. . . . I can hardly, therefore, fancy myself exceedingly presumptuous if I declare the forceps to be quite as useless to women in labour as either the blunt hook or fillet. But I must beg leave to go still a little further upon this head and observe that this is not only a useless but also a very pernicious instrument, for by hastening delivery before the parts are properly distended by the natural pains and strainings of the mother, such dreadful lacerations are made, both internally and externally, as must frequently prove fatal, or, at best, the source of much inconvenience and misery to the unfortunate woman who has been the subject of such practices. . . . Nor am I by any means singular in my opinion of the inutility of this instrument. The best practitioners in midwifery have given it up, and very seldom have recourse to it; and I am credibly informed that the man who has, for many years, been deservedly esteemed the practitioner of the greatest skill and judgment of any who profess the obstetric art in this kingdom. (this evidently refers to Dr. William Hunter), declares that he has seldom or never, during the whole course of his practice, used the forceps, or met with a case where he thought it necessary to do so; unless he may be said to use them when he occasionally introduces a single blade to remove any impediment which the head of the child may accidentally meet with by pressing upon some of the bones of the pelvis, whereby its descent and delivery are retarded; but he adds that occasions for this very seldom happen; he could almost always get the better of such obstacles with the hand only.”^a

There can be no doubt that the forceps or vectis was, at this period, greatly abused in both English and foreign midwifery practice, for in the latter we read of one accoucheur boasting of 800, and another of 1,200 instrumental deliveries, and of the same state of practice in England we are assured on the authority of Osborne^b and Denman.^c

In contemporaneous medical literature we find constant reference to the frequent use of the forceps. Thus, this is one of the heaviest charges brought against the obstetricians by the author of the most unjust

^a The Present Practice of Midwifery Considered. P. 79. London: 1772.

^b Essays on the Practice of Midwifery. By William Osborne, M.D. P. 142. London: 1792.

^c Introduction to the Practice of Midwifery. By Thomas Denman, M.D. P. 275.

and indecent attack ever made on our profession. "Men-midwives," says this scurrilous writer, "seldom wait for nature's moment. Women are objected to because they are tedious. Men are extolled because they are quick. If Dr. — has one or two pregnant ladies waiting, from whom he expects handsome payments, he will take merit for hastening the birth, and if any accident happens from his impatience, his reputation is too well established to suffer in the eyes of mankind, and the misfortune is attributed to some of the common casualties attending labour, when it derived its source solely from the doctor's having brought the child forward unnaturally before the parts were predisposed, by a proper distension, for its reception and passage. I fear two ladies died lately from this very practice; the parts inflamed, the inflammation spread by sympathy, the bowels mortified. The men-midwives not only give rise to inflammation by bringing the child before the woman has felt half the number of pains which nature intended to predispose the parts, but likewise by their dilatations. Can any practice be more repugnant to common sense than that of irritating the exquisitely sensitive nervous fibres of these parts by way of preparing them for distension? The men absolutely counteract the very end they pretend to have in view by dilatation! Friction must irritate, irritation must inflame, inflammation must contract."*

The reaction against the forceps now set in, and, being supported by men so eminent as William Hunter, Denman, and Osborne, as well as their successors in the early part of this century, has continued to affect midwifery practice down to a very recent time.

"It is scarcely possible," observes Denman, "to say too much against a hasty recourse to the forceps, even in cases which may ultimately be relieved by using them, and neither this nor any other instrument is now used in the practice of midwifery one-twentieth part as frequently as they were fifty years ago. . . . The use of instruments of any kind ought not to be allowed in the practice of midwifery from any motives of eligibility. Whoever will give himself time to consider the possible mistakes and want of skill in younger practitioners, which I fear many of us may recollect, the instances of presumption in those who, by experience, have acquired dexterity, and the accidents which, under certain circumstances, seem scarcely to be avoided, will be strongly impressed with the propriety of this rule, as well as from the general reason of the thing."†

Dr. Osborne says that "in the state indicating the use of the forceps, all the powers of life are exhausted, all capacity for further exertion is at an end, and the mind is as much exhausted as the body; they would

* *The Danger and Immodesty of Employing Men-midwives, &c.* Anonymous. 2nd edition. P. 69. London: 1772.

† *Introduction to the Practice of Midwifery.* By Thomas Denman, M.D. P. 276.

both together yield under the influence of such continued and unavailing struggles." ^a

"If you must err," says Dr. Blundell, "then take my advice and err rather by the neglect or rejection of instruments, than by their too frequent use; for the cases in which you may use instruments without need are as numerous as the cases that fall under your care, with the exception of the few—very few—in which these weapons are really required." ^b

It would be superfluous to add any other quotations from the countless authorities who, down to our own time, have repeated Denman's warnings against the too-frequent employment of the forceps, or to cite any of the almost equally numerous writers who now advocate this practice. The statistics I am about to adduce will show the practical effect of these teachings better than any mere statement of opinions could do.

The cases in which I have used the forceps myself are shown in the following Tables, in the first of which is contained an abstract of one hundred and sixty-three forceps cases in hospital and private practice, and in the second the details of seventy-five cases in which I have applied the forceps in private and consultation practice.

^a *Essays on the Practice of Midwifery.* By Wm. Osborne, M.D. Essay IV., Sec. 1. London: 1795.

^b *Principles and Practice of Obstetric Medicine.* By James Blundell, M.D. P. 321.

TABLE 1.—*Dr. More Madden's Forceps Cases, from May, 1868, to June, 1875 (163 Cases).*

Total Number of Cases	Pregnancy		Cause of Operation in each Case											Sex and Condition of Child				Duration of 2nd Stage			Forceps used			Result		Cause of Death in Fatal Cases			
	Primipara	Multipara	Inertia of Uterus	Disproportion	Malposition	Rigidity	Prolapse of Funis	Impaction of Head in Cervix Cases	Exhaustion	Hæmorrhage	Convulsions	Threatened Rupture	Rupture of Uterus	Male Living	Female Living	Male Still-born	Female Still-born	Under 3 hours	From 3 to 8 hours	Over 8 hours	Madden's Short	Madden's Long	Hospital Straight	Recovered	Died	Puerperal Fever and Pyæmia	Shock	Secondary Hæmorrhage	Convulsions
88	57	31	49	15	7	4	3	2	2	2	2	2	—	44	37	4	3	27	42	9	41	—	47	82	6	4	1	—	1
75	40	35	37	17	4	6	1	2	—	2	4	1	1	39	26	7	3	11	28	5	42	21	12	70	5	3	—	1	1
163	97	66	86	32	11	10	4	4	2	4	6	3	1	83	63	11	6	38	70	14	83	21	59	152	11	7	1	1	2

TABLE 2.—*Forceps Cases from February, 1869, to June, 1875.*

No. of Case	Patient's Age	Pregnancy	Hours Ill	Length of 2nd stage	Cause for Interference with Forceps	Description of Forceps used	Sex and Condition of Child	Result to Mother	Observations
1	48	1st	28	—	Disproportion and rigidity	Long straight	F. still-born	Recovered	Os rigid; head high above brim; pains very strong, but ineffectual; patient becoming exhausted, chloroform, and as soon as os half dilated, but dilatable, long forceps applied, and delivery effected.
2	28	3rd	32	—	Inertia	Madden's short	F.	Recovered	—
3	20	1st	30	5	Inertia	Madden's short	F.	Recovered	—
4	25	2nd	6	—	Accidental hemorrhage	Long straight	M. still-born	Died	Forceps applied as soon as the os was dilatable; mother died of metro-peritonitis ten days after delivery.
5	36	5th	18	4	Inertia	Long straight	M.	Recovered	—
6	40	3rd	50	6	Angular deformity of coccyx	Long straight	M.	Recovered	Ten years since last child; coccygeal articulation ankylosed and bent forward; delivery effected with considerable difficulty by long forceps, coccyx being forced back during the extraction.
7	39	1st	20	3	Inertia	Madden's short	F.	Recovered	—
8	19	1st	24	—	Face presentation	Long straight	M. still-born	Recovered	—
9	30	2nd	12	4	Disproportion	Long straight	M.	Recovered	Child very large; circumference of head nearly 15 inches.
10	28	4th	11	3	Inertia	Madden's short	F.	Recovered	—
11	28	2nd	13	—	Inertia	Madden's short	F.	Recovered	Slight P. P. H.; cold syringe.
12	—	3rd	48	—	Inertia, pulse rapid	Long	M.	Recovered	In labour two days and nights; os rigid; two 20 gr. doses of chloral; two warm baths; stimulating enemata; chloroform; long forceps; pulse rapid; alive; discharge; child very large; died.
13	26	1st	12	—	Acute uterine suffering	Madden's short	M. 8 lbs.	Recovered	Delivery, in consultation, effected with great difficulty; head of pelvis diminished antero-posteriorly; child's head deeply indented.
14	22	1st	20	4	Disproportion, projection of promontory of sacrum	Long straight	M.	Recovered	—

15	21	2nd	70	35	Inertia from over distention of uterus	Long	-	M. still-born	Recovered	-
16	-	1st	24	-	Inertia, slight disproportion	Long	-	M.	Recovered	-
17	26	2nd	-	4	Slight disproportion	Madden's short	-	M.	Recovered	-
18	28	5th	-	-	Prolapse of cord, inertia	Madden's short	-	F. still-born	Recovered	-
19	-	6th	-	-	Inertia	Madden's short	-	F.	Recovered	-
20	34	7th	16	4	Inertia	Long	-	F.	Recovered	-
21	-	1st	20	-	Inertia	Madden's short	-	M.	Recovered	-
22	36	5th	30	6	Inertia, rigidity	Madden's long	-	M.	Recovered	-
23	28	4th	-	4	Inertia	Madden's short	-	F.	Recovered	-
24	-	1st	24	-	Disproportion	Long straight	-	M.	Died, puerperal fever	-
25	22	1st	36	-	Disproportion, rigidity	Long straight	-	M.	Died, puerperal fever, on 9th day	-
26	23	1st	40	12	Complete inertia	Long straight	-	M.	Recovered	-
27	25	1st	60	5	Rigidity, disproportion	Madden's long	-	M.	Recovered	-
28	30	-	-	-	Inertia	Madden's short	-	F.	Recovered	-
29	-	2nd	40	12	Inertia	Madden's short	-	M.	Recovered	-
30	21	1st	16	-	Inertia	Madden's short	-	F.	Recovered	-
31	22	1st	30	6	Slight disproportion	Long Hospital	-	M.	Recovered	-

Delivered of first child by craniotomy.

Sent for in consultation; no pulsation; placenta removed, being morbidly adherent fibroid tumour in uterus; P. H.

Labour very tedious in 1st stage from rigidity; six years since last child.

Head impacted at brim; extraction difficult; puerperal fever on third day; consultation, Dr. Denham.

Sent for in consultation; child born alive, but died immediately; got puerperal mania on third day; recovered in about six weeks.

1st stage delayed by rigidity; warm bath taken; emetic; chloroform; 2nd, disproportion; child very large; delivered with great difficulty.

Called in consultation to apply forceps.

Do. do.

Mechanically expanded os, and applied forceps.

TABLE 2—continued.

No. of Case	Patient's Age	Pregnancy	Hours III	Length of 2nd stage	Cause for Interference with Forceps	Description of Forceps used	Sex and Condition of Child	Result to Mother	Observations
32	38	1st	24	5	Slight disproportion -	Madden's short	M.	Recovered	Severe P. P. H., checked by introduction of hand and use of perchloride of iron; got puerperal fever 4th day, typhoid type, and lay for nearly six weeks in extreme danger; eventually recovered; Dr. Hayden saw her with me in consultation; she was the worst case of puerperal. I ever saw recover.
33	18	1st	30	—	Rigidity -	Madden's short	M.	Recovered	1st stage delayed by rigidity; 2nd shortened, as patient was becoming exhausted.
34	—	2nd	24	—	Inertia -	Madden's short	M.	Recovered	—
35	—	1st	20	5	Inertia -	Madden's short	F.	Recovered	In consultation with Dr. Cahill.
36	24	1st	26	4	Inertia -	Madden's short	M.	Recovered	Slight attack of puerperal mania 3rd day, for one day only; recovered.
37	21	1st	24	8	Inertia -	Madden's short	M.	Recovered	Patient threw herself about as head was being extracted; perineum lacerated through sphincter; three sutures; at once perfect union.
38	32	1st	20	3	Disproportion -	Madden's short	M. still-born	Recovered	1st stage delayed by rigidity; 2nd by disproportion; mother very small, child large.
39	24	2nd	10	5	Inertia -	Madden's short	F.	Recovered	—
40	24	1st	12	4	Slight disproportion, pains very violent	Madden's long -	M.	Recovered	Patient very hysterical; had to be kept under chloroform throughout labour; pains very violent; head making no advance, short forceps applied, but slipped; delivery effected with difficulty with long curved forceps.
41	22	2nd	20	2	Inertia -	Short straight -	F.	Recovered	—
42	26	2nd	84	6	Inertia -	Madden's long -	M.	Died of secondary hæmorrhage	In labour for nearly a week; 1st stage delayed by rigidity; 2nd very feverish and exhausted; delivered by long forceps; head above brim; next day eruption of small-pox came out; became delirious on morning of 9th day; was attacked by secondary hæmorrhage, of which she died.
43	26	1st	24	5	Inertia -	Madden's short	M.	Recovered	—

44	20	1st	—	6	Face presentation, impacted	Madden's short	M.	Recovered	In consultation with Dr. O'Farrell.
45	21	1st	30	—	Head impacted	Madden's long	F.	Recovered	—
46	—	2nd	12	4	Inertia	Madden's short	M.	Recovered	—
47	27	4th	19	4	Inertia	Barnes'	F.	Recovered	—
48	—	1st	80	12	Head impacted	Madden's short	M. still-born	Recovered	In consultation with Dr. McVeagh; my long forceps could not be applied; the short alipped repeatedly, but ultimately we effected delivery with them.
49	30	1st	14	3	Inertia and slight disproportion	Madden's short	F.	Recovered	—
50	25	1st	15	5	Slight disproportion	Author's long curved	F.	Recovered	—
51	22	2nd	26	2½	Inertia	Author's short	F.	Recovered	1st stage delayed by rigidity.
52	30	1st	20	8	Inertia	Author's short	F.	Recovered	Sent for to apply forceps.
53	30	3rd	8	—	Accidental hæmorrhage	Author's long curved	F.	Died of typhoid fever 6 weeks after delivery	Membranes ruptured; hæmorrhage still continuing, ergot administered, and forceps applied as soon as os was sufficiently dilatable.
54	18	1st	16	2	Inertia	Author's short	F.	Recovered	—
55	30	1st	23	6	Disproportion, head impacted in pelvis	Author's long curved	M. still-born	Recovered	Bones overlapping; refused to allow forceps sooner.
56	25	1st	40	12	Complete inertia, head on perineum	Author's short	F.	Recovered	Patient residing several miles from any medical assistance; sent for to apply forceps; patient under care of a midwife.
57	29	6th	12	4	Inertia	Author's short	M.	Recovered	—
58	26	3rd	18	5	Slight disproportion and inertia	Madden's long	M.	Recovered	Child very large; head impacted in brim; great difficulty in extraction.
59	36	8th	20	—	Slight disproportion and inertia	Madden's long	F.	Recovered	—
60	30	1st	24	9	Slight disproportion and inertia	—	M.	Recovered	—
61	30	1st	24	5	Inertia	Short	M.	Recovered	—

TABLE 2—continued.

No. of Case	Patient's Age	Pregnancy	Hours ill	Length of 2nd stage	Cause for Interference with Forceps	Description of Forceps used	Sex and Condition of Child	Result to Mother	Observations
62	36	1st	28	—	Epileptiform convulsions	Madden's long	M. still-born	Died	Epileptiform convulsions; in consultation; on rigid, size of florin; Barnes' bags failing to dilate, as incised, and delivery accomplished with my long forceps; convulsions continued after delivery; died in four hours subsequently.
63	38	1st	11	6½	Slight disproportion	Short	F.	Recovered	—
64	30	1st	8	8	Inertia	Madden's short	F.	Recovered	—
65	26	3rd	10	4	Slight disproportion	Madden's short	M.	Recovered	Child very large, very small woman; no advance for 2½ hours; pains at first very strong, becoming weaker.
66	24	2nd	24	—	Rigidity	Long	M.	Recovered	On thin and rigid; pains incessant; warm baths and enemata, kept under chloroform all night; forceps applied as soon as os was dilatable; head above brim.
67	36	3rd	18	—	Inertia	Long	M.	Recovered	No advance for three hours; stimulating enemata; ergot; long forceps; os size of crown, but very soft and dilatable.
68	31	9th	20	4	Inertia	Short	M.	Recovered	—
69	19	1st	15	—	Rigidity	Short	M.	Recovered	Pains incessant; kept under chloroform nearly all night; os rigid; as soon as os half dilated, head being low down, short forceps.
70	37	1st	12	—	Slight disproportion	Short	M.	Recovered	Head impacted in pelvis for two hours; ergot; stimulating enemata; no advance; short forceps.
71	26	1st	8	1	Epileptiform convulsions	Short	M.	Recovered	One fit before and one after delivery.
72	22	1st	10	3	Inertia	Short	M.	Recovered	Slight laceration of perineum.
73	30	3rd	14	—	Rigidity	Long	M.	Recovered	Head high above brim; os would not dilate beyond size of crown; for four hours no advance; 1 dilated and delivered with long forceps.
74	25	5th	17	2	Inertia	Short	M.	Recovered	—
75	—	4th	7½	2	Inertia	Short	F.	Recovered	—

From 1745, when the Dublin Lying-in Hospital was first opened by Dr. Mosse, down to the present time, nearly two hundred thousand patients have been delivered in this great institution. But only seven of the Masters have left any detailed record of their practice, and from these separate Reports I compiled an account of the comparative use of the forceps at different times in the hospital for my "*Lectures on the Forceps*," since published. These statistics may probably be new to some of my hearers, and, therefore, I shall now briefly refer to them in proof of the desuetude of the forceps during many years, and the saving of life and suffering which has resulted from its reintroduction and judicious use in modern practice.

During the Mastership of Dr. Joseph Clarke, from 1787 to 1794, there were 10,387 deliveries in the hospital, and the forceps was only applied in 14 of these with 6 deaths. But the more easily used perforator and crochet were resorted to in 49 cases. And in his private practice, extending over forty years, Dr. Clarke only once attempted to use the forceps. In Dr. Labatt's Mastership, from 1815 to 1822, during which time 21,867 births took place in the hospital, the forceps does not appear to have been used in any instance. From 1826 to 1833 Dr. Collins used the forceps in 24 cases out of a total of 16,654, but employed the perforator in no less than 118 cases. From 1842 to 1845, Dr. Charles Johnson used the forceps in 18, the vectis in 16, and the perforator in 54 cases, in 6,702 deliveries. From 1847 to 1854, in Dr. Shekleton's Mastership, there were 13,748 deliveries in the Rotunda, and the forceps was now used in no less than 220 of these, and the perforator in 54. Dr. McClinton, who ruled the hospital from 1854 to 1861, brought the forceps into still more frequent requisition, and in his last three years of office employed it or the vectis in 76 cases, or once in every 60, in 3,700 deliveries, whilst the number of craniotomy cases was reduced to 5. The next Master, Dr. Denham, has not yet published his Report, from 1861 to 1868, but was (as I had an opportunity of knowing when serving as his assistant, as well as subsequently under Dr. Johnston) a constant advocate for the timely use of the forceps, as well as a most dexterous operator with it. To Dr. Johnston, the present Master, undoubtedly belongs the credit, however, of having brought the forceps into more frequent use than had ever previously been the case. Thus, from November, 1868, to November, 1874, in 7,027 deliveries, the forceps has been used in no less than 639 cases, or about once in every 11 cases, with only 39 deaths, whilst the proportion of craniotomy, or cephalotripsy, cases has been reduced to 29.

The foregoing statistics show that, as the forceps is used more frequently, the mortality in the cases in which it is employed diminishes, and, secondly, also shows the happy effect of the free use of the forceps in lessening the proportion of craniotomy cases in the hospital.

In 1872 Dr. Johnston employed the forceps in thirty-five cases before the os was fully dilated, and in the following year's Report he says:—"There were 36 of the foregoing cases in which we considered it prudent to apply the forceps before the os was fully dilated; and as there are many still who will be astonished at this apparently bold mode of practice, and mayhap question its justifiability, I beg leave to assure them that, having adopted it for the last two years, during which time we delivered 71 such cases, we are more and more convinced each day of its great advantage in saving the lives of both mother and child."* In his last Report, for 1874, Dr. Johnston again urges the advantages of this practice, which was spoken of, during the subsequent discussion in this Society, as a novel practice, and even as one "opening a new era in the history of midwifery." This practice was, however, described in the earliest published accounts of the forceps, and so extensively did it at one time prevail as to lead the most eminent practitioners to reprobate the premature use of instruments in terms so exaggerated and so forcible as to prevent their followers, for many years, from resorting to their use even when most urgently required.

That the application of the forceps before the full dilatation of the os uteri is necessary in certain cases, especially of complex labour, is unquestionable; and in Table No. 3 are given some cases in which I have thus employed the long forceps.

No fact in midwifery seems better established than that the dangers of child-birth bear a certain relation to the length of the second stage of labour, and that it matters comparatively little what the period of the first stage may be, provided that the second stage, when the child's head has passed through the pelvic brim, is not unduly prolonged. But the ordinary definition of these stages, however useful to students, may be disregarded by practitioners when it is necessary to do so. In some cases we find the child's head down in the pelvis, and the labour more advanced before the os uteri is fully dilated than in others in which it has been expanded for some time, and, under these circumstances, we may, when necessary, apply the forceps as soon as the os tincæ is sufficiently dilatable. This procedure should, I think, be carefully restricted to cases of absolute and unavoidable necessity. In the hands of obstetricians so experienced and so judicious as Dr. Johnston and Dr. Nichols, by whom this practice has been recommended, it is, of course, safe and feasible, but the danger is that others, less experienced or less judicious, seeing its success under exceptional circumstances, may be emboldened to resort to it under less favourable conditions.

* Report of the Rotunda Hospital, from Nov. 8th, 1872, to Nov. 8th, 1873. By George Johnston, M.D., F.K. & Q.C.P., Master. P. 10.

TABLE 3.—Cases in which Forceps was applied before Full Dilatation of Os Uteri.

No. of Case	Age	Pregnancy	Cause of the Operation	Duration of Labour	State of Os Uteri when the Forceps was applied	Sex and State of Child	Result to Mother
1	28	1st	Rigidity of os, and threatened rupture of the uterus	29 hours	Half dilated	Female, alive	Recovered
2	27	1st	Rigidity and exhaustion	37½ hours	Size of crown-piece	Male, alive	Recovered
3	36	7th	Fœtal heart failing	24 hours	Three-quarters dilated	Female, alive	Recovered
4	25	5th	Accidental hæmorrhage	15 hours	Size of crown-piece	Female, still-born	Recovered
5	27	5th	Exhaustion	16 hours	Three-quarters dilated	Male, alive	Recovered
6	22	1st	Hæmorrhage	12 hours	Three-parts dilated	Male, alive	Recovered
7	40	3rd	Exhaustion	36 hours	Half dilated	Male, alive	Recovered
8	20	1st	Rigidity, threatened rupture	26 hours	Size of crown-piece	Male, alive	Died 8th day, puerperal peritonitis
9	20	1st	Rigidity and exhaustion	51 hours	Size of crown-piece	Male, alive	Recovered
10	20	1st	Threatened convulsions	30 hours	Three-parts expanded	Male, alive	Recovered
11	27	4th	Intense suffering, no advance for 8 hours	21 hours	Three-quarters dilated	Male, alive	Recovered
12	24	2nd	Exhaustion, rigidity	80 hours	Size of crown-piece	Male, alive	Died 8th day of secondary hæmorrhage
13	30	7th	Exhaustion	29 hours	Half dilated	Female, alive	Recovered
14	35	1st	Convulsions	16 hours	Size of a shilling when incised to effect delivery	Male, still-born	Died of convulsions 7 hours after delivery
15	36	3rd	Rigidity	28 hours	Three-quarters dilated	Male, alive	Recovered
16	28	1st	Exhaustion, rigidity	24 hours	Half dilated	Male, still born	Recovered
17	31	3rd	Rigidity, no advance for 12 hours	18 hours	Size of crown-piece	Male, alive	Recovered

Natural labour is necessarily a slow process, by which the uterus contracts so as to expel its contents, which, and the parts through which they pass, must gradually accommodate themselves to the immense strain thus put upon them, and this gradual and permanent uterine contraction is essential to the life of the patient, and is her only safeguard against fatal *post partum* hæmorrhage. If the uterine efforts be allowed to continue too long without any assistance in a case of difficult or obstructed labour, this result may follow from exhausted contractility. But, on the other hand, if the child be dragged forth before the uterus has had sufficient time to contract on its vessels, the same consequence must be inevitably produced. If, therefore, obstetric practitioners should ever come to regard it as a safe rule of practice to apply the forceps as soon as the os uteri can be sufficiently expanded to admit its introduction, which, in some instances, might be done long before the occurrence of any true labour pains, is it not probable that the ill results of the indiscriminate, and injudicious employment of this practice will outweigh all the possible benefits of its right use?

Most obstetricians apply the same forceps in all cases. When I was in the Rotunda Hospital, Dr. Denham's straight forceps was invariably used, and, at present, Dr. Barnes' curved forceps is as constantly preferred. This exclusive reliance on one instrument is, I think, a great cause of the differences of opinion as to the uses and safety of the forceps. For, under this name, two different instruments are frequently classed together; and there can be no useful comparison between distinct mechanical powers, such as the long double-curved forceps, which is a powerful lever and compressor, but a feeble tractor, and the short straight forceps, which is a tractor of great force in proportion to its size, though a weak lever or compressor.

In operative midwifery, as in any mechanical problem, it is obvious that there should be a due proportion between the power used and the resistance to be overcome, and that the force employed should be the minimum necessary to accomplish the desired effect. Thus, a steam hammer, capable of fracturing the strongest bar of iron, can be so deftly managed by a trained mechanic as to crack a walnut without breaking it; and we have recently seen that a skilled natator can use his life-preserving apparatus to traverse a wide and angry sea in safety; but yet, without in any way under-estimating the value of either invention for their proper purposes, none doubt that the shell might be cracked or the Straits of Dover crossed with greater certainty and greater ease by less heroic means. So it is with the long and short forceps; and though under exceptionally favourable circumstances the former may be used as a substitute for the latter, under ordinary conditions and in ordinary hands the latter is unquestionably far safer, as well as in most cases more applicable.

I have endeavoured to carry out these views in the two instruments now shown to the Society, and which have been tested by extensive use during the last few years. The first is a very short straight forceps. This weighs only 8 ounces, and is 10 inches in length, of which 6 inches are occupied by the blades, the curvature of which is very gradual. They are fenestrated throughout, so that, when applied, the child's scalp may protrude and cover the rims, thus protecting the maternal passages from any contact with the instrument during extraction. Immediately above the lock is a ring for the finger of the operator. The greatest space between the blades, when closed, is $2\frac{1}{2}$ inches, and between the points $1\frac{1}{4}$ inch. This instrument is most portable, is easily applied, and fits the child's head better than the ordinary forceps. It possesses little power as a lever or compressor, but is a very efficient extractor, and, therefore, may be used in nine-tenths of the cases in which any instrumental assistance is required during labour. The most common cause of delay in the second stage of labour is inertia of the uterus, requiring but a little aid to supplement the inefficiency of the natural *vis a tergo*, and it is for such cases that the short forceps is specially adapted.

It is unnecessary to enlarge on the expediency of affording timely and judicious assistance whenever the second stage of labour is unduly prolonged, or to speak of the ill effects of such delay, the protracted sufferings of the patient, and the subsequent danger of inflammation of the soft parts, of exhaustion or of *post partum* hæmorrhage, as well as the possible risk to the child, which may result from leaving a woman for many consecutive hours in pain and anxiety on the very verge of delivery, when this might be easily and safely accomplished with the assistance of the short forceps. No other motives, however, should ever induce us to interfere with the course of labour, nor should any question of our own convenience be suffered to influence our judgment. No rule as to the time which a patient should be suffered to remain in labour before instrumental assistance is resorted to is of the least value; for one woman may suffer more from an hour's delay in the second stage than another would from six hours. The rule should, therefore, be to effect delivery by art whenever any danger to either the mother or to the child is likely to result from further protraction of the labour. And even then, unless the danger is urgent, the forceps should not be applied until a trial has been given to other means likely to stimulate the natural efforts to effect delivery, such as friction over the uterus, stimulating enemata, and a dose of ergot.

If such caution is useful with regard to the use of even the short straight forceps—the application of which, in the second stage of labour, when the os has been some time fully dilated, and the head is low down in the pelvis, is, with due care, a simple, safe, and easy operation—how much

more necessary is it with regard to the instrument I now place before you. This is a double-curved long forceps, somewhat formidable-looking, but of great power, and intended to effect the delivery of living children in cases in which this could not be accomplished by any other forceps.

This instrument, which I exhibited at a meeting of the British Medical Association in London two years ago, being designed to obviate the use of the perforator or cephalotribe, is necessarily of great strength and size. It weighs about 26 ounces, and is 18 inches in length, the blades 10 inches long, the fenestrated portion being 17, and the shanks 8 inches. The widest space between the blades, when closed, is $2\frac{1}{4}$ inches, and between the points $1\frac{1}{4}$ inch. The handles being movable, the instrument may be applied in the ordinary obstetric position; or when a greater degree of compressing power and leverage is required, the handles may be adjusted, and then it can only be employed by placing the patient on her back. To these handles may be affixed a screw, somewhat like that of the cephalotribe, by which the amount of compression exerted on the child's head can be exactly regulated. Strong shoulders are also affixed below the loops to increase the traction power of the instrument. The blades are very gradually curved, and thus, when applied, the pressure is more equally distributed over the child's head, so that the instrument is less liable to slip than other forceps.

This instrument is fortunately seldom required, for the class for which it is specially designed are happily comparatively rare, as it is intended mainly for the purpose of preventing the use of embryotomic instruments, and also for certain cases of complex labour, in which version cannot be readily accomplished before the natural termination of the first stage of labour, but in which immediate delivery is essential for the safety of the mother or of the child.

It need hardly be observed that an instrument of such great power, however useful when necessarily and judiciously used, cannot be improperly or needlessly resorted to without grave risk.

There can be no doubt of the compressing power of the forceps. Nor is it necessary to refer to the experiments of Baudelocque to demonstrate what every case of natural labour proves—i. e., the extraordinary plasticity of the foetal head; and it is unquestionable that it is possible by art to assist the natural moulding process by which the child's head is forced through the pelvis. This assistance, when absolutely necessary, may be given by the instrument under consideration, and even a very considerable degree of disproportion may be overcome by the compressing power of this forceps—provided always that it be most gently and gradually applied in careful imitation of natural labour. I have thus, or by version, in several instances safely extracted living children from women who had, in their previous confinements, been delivered by craniotomy or cephalotripsy on account of some pelvic deformity.

As these forceps differ somewhat from those in general use, I may here reiterate a few suggestions as to the manner of applying them. The rectum and bladder being first emptied, the operator should make an examination to ascertain the exact position of the child's head. Then, if the short forceps is used, placing the patient on her left side, with her hips projecting over the edge of the bed, he should sit down opposite the perinæum, and taking the upper or pubic blade, previously warmed and oiled, in his left hand, he should gently insinuate it between the two first fingers of his right hand and the child's head, until the fenestrum is well over the ear, and the lock rests against the perinæum. In like manner the sacral or lower blade is now to be introduced, the operator merely reversing the previous position of his hands. As soon as the locking is effected, which with this instrument is peculiarly easy, and requires no force, the operator introduces his right index finger into the ring already described, and very gently draws the head in the axis of the pelvis, at first downwards and backwards, and then downwards and forwards, until the vertex protrudes through the vulva, when the blades are unlocked and withdrawn, so as to avoid any possibility of lacerating the perinæum, and the child is helped out by manual pressure from the coccyx forwards over the perinæum.

The long double-curved forceps is to be used nearly in the same manner, except that, whenever practicable, it should be applied with the patient lying in the supine position, and drawn down to the end of the bed, with her legs flexed on the body, as though she were about to undergo lithotomy. As very few patients in this country will submit to be so placed, however, this instrument may be applied as the short forceps, bearing in mind that whatever situation the child's head may be in, the position of the blades of the long forceps must correspond with that of the transverse diameter of the brim of the pelvis. Another point of difference is, that this being a compressing instrument, the handles must not be suddenly or forcibly closed. In the case of a normal foetal head at full term, they should remain a full inch apart. When further compression is absolutely necessary to accomplish delivery, this may be cautiously and gradually applied by the screw already described, turn by turn, until the blades are sufficiently approximated to allow of their being slowly drawn down through the pelvis. In this operation it must never be lost sight of that these blades include in their iron grasp the fragile head of a living child, to which any hidden, violent, or excessive compression would prove destructive, but which may, within certain limits, be safely assisted in that gradual moulding and elongation necessary to effect its passage through the pelvis.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—ROBERT M'DONNELL, M.D.

Secretary—E. H. BENNETT, M.D.

Acute Tuberculosis.—DR. HAYDEN said: I have the honour to submit to the Society a very good example of acute miliary tuberculosis. On the 25th of January, a man, aged thirty years, was admitted into the Mater Misericordiæ Hospital suffering from fever of an anomalous character. The fever did not conform to any particular type; it resembled more closely typhoid than any other form, but differed from ordinary typhoid in the absence of spots and of diarrhœa. The temperature was very irregular, and fluctuated between 99°, which was the temperature on the day of admission, and 104°, which was the highest temperature, on the thirteenth day of his illness. The course of the fever was very irregular in many respects. The man was more or less incoherent. The pulse was never below 94, and occasionally ascended to 120, and on one occasion it reached 180. The temperature chart which I present exhibits irregular fluctuations. Thus, for example, on the eighth day of the patient's illness the temperature was 99°, next day it went up to 101°, receding on the following day to 100°, and remaining at that standard both morning and evening. The second day after it went up to 102°, and on the thirteenth and fourteenth days to 104°, which was the registered temperature both in the morning and evening of these two days. On the fifteenth day it descended to 102°, and on the sixteenth day to 101°, remaining at that standard throughout the day. On the seventeenth, eighteenth, and nineteenth days the temperature varied in the usual way from 101° in the morning to 102° in the evening. On the twenty-second day it fell suddenly to 98°. On the following day it again went up to 102°. On the twenty-fourth it was 103° in the morning, and fell in the evening to 102°. On the twenty-sixth day the morning temperature was 103°, and the evening temperature 101°. On the twenty-eighth day of the man's illness his temperature was 101°. From this date till the 10th of March Dr. Nixon had charge of the patient. In the course of a few days the breathing and the pulse became very rapid, and Dr. Nixon made the diagnosis of acute miliary tuberculosis. When I saw the man, on the 10th of March, I found the following to be his condition:—He was incoherent, but when spoken to sharply he could answer questions; tongue, dry; cough, with expectoration; pulse and respiration rapid. The resonance of the chest

was almost normal. Throughout râles of a sub-crepital character were audible, and these were mixed with slight rhonchi. The man died on the 13th of March. We find a typical example of tuberculosis of the lungs, kidneys, and spleen. The lungs are exceedingly voluminous and hyperæmic, especially behind. Throughout they present a fine example of acute miliary tuberculosis. I failed to find caseous nodules in any of the organs. The liver was fatty, and exhibited upon the surface several minute granulations, manifestly tubercular.—*March 20, 1875.*

Gout associated with Chronic Rheumatic Arthritis.—DR. E. H. BENNETT submitted to the Society specimens presenting the pathological characters of gout and of chronic rheumatic arthritis in the same articulations.

He said:—I removed the parts on the table from the body of a brewer's drayman, aged about fifty, last summer. The casts of his hands and wrists were taken during the progress of the dissection—a fact which explains defects calculated to mislead, and which are seen in one—namely, the marks of incision.

The patient had been admitted, in the first instance, to the medical wards of Sir P. Dun's Hospital, and was subsequently transferred to the surgical wards. He suffered from well-marked cardiac disease with enlargement of the liver and moderate ascites. A slight amount of general anasarca existed in the lower limbs; and, further, albumen existed in quantity in the urine. With all these troubles, his chief complaint, at the time of his admission to the medical wards, was from an attack of acute gout affecting many joints—wrists, ankles, knees, and the joints of the fingers and toes. On the subsidence of this attack he suffered much from bleeding piles. For the relief of this affection he came under my care. On first seeing the patient I did not hesitate to diagnose that he suffered from chronic rheumatic arthritis of the smaller joints and of the knees. The characteristic deformities of the hands and feet and of the knees did not leave any doubt on my mind—in fact, no doubt of the nature of the articular affection existed in my mind until I heard that the patient's previous sufferings had been attributed to acute gout by my colleagues. Of all his joints, that which presented, to my mind, the most unmistakable evidence of chronic rheumatic arthritis, was the inferior radio-ulnar joint of the right side; this joint had been altered, so that it was possible to push the lower extremity of the ulna either backwards or forwards without moving either the radius or carpal bones to a degree that I have seen possible only in advanced chronic rheumatic arthritis. This feature, taken with the characteristic deformity as seen in the casts on the table, made me doubt the existence of gout. At this time the acute phenomena of that disease had subsided. A positive symptom of gout existed, which, had I attended to it, would have corrected my diagnosis—namely, minute deposits in the pinnæ of the

ears, composed of small tophi—a symptom which Dr. Garrod has drawn special attention to. My faith in its value had been shaken by failing to find any such deposits in the cases of gout which I have dissected, and which I have laid before this Society. On making the *post mortem* examination in this case, some weeks after the question of diagnosis arose, when the existence of true gout was demonstrated by dissection, I did not fail to look for these tophi, and readily found two small deposits, one in each ear, which, when tested, gave the characteristic reaction of lithic acid.

The albumen contained in the urine in this case was particularly readily dissolved after precipitation by the addition of nitric acid, which, even in the dilute form, first precipitated and then rapidly re-dissolved the precipitate.

The patient, shortly after being transferred to the surgical wards, began to show symptoms of uræmia—he became drowsy, and his anasarca increased; he suffered much pain in the joints, and the bleeding of rectum was with difficulty and imperfectly checked. After a few days he became more and more comatose, and finally died insensible.

On examining the joints of the wrists and knees, distinct deposits of gout, both on the face of the articular cartilages and on the sheaths of the tendons of the wrist, were found. The bursæ of the anterior annular ligaments of the wrists were distended with fluid, while their synovial membranes were marked by gouty deposit. The right inferior radio-ulnar joint which we have here was removed, as I think it presents features of much interest. In it we found no sign of the white gouty deposit—nothing but the softening of the articular cartilages and eburnation of the bone, which characterises chronic rheumatic arthritis. In this knee-joint these characters are seen also; the patella shows its cartilage softened, and the external condyle of the femur presents a characteristic furrow, in which the bone is exposed and polished; but in this joint, and on the very furrow of the trochlea, there is deposited a layer of unmistakable gouty matter. I could not examine many joints, as I with difficulty obtained any *post mortem* examination of the body; but I think that these before us are absolutely decisive of the co-existence of the two diseases—chronic rheumatic arthritis and gout. The knee, too, proves that in it, at least, the gout was developed later than the chronic rheumatic arthritis, for we find the deposit belonging to the former disease laid down on a surface already altered by the latter. The kidneys are contracted, granular, and pale in colour, but no trace of gouty deposit is to be seen in any part of their tissue. I have already noticed the deposits of urate of soda found in the pinnae of the ears.

In former communications to this Society I have submitted three dissections of gout (Vol. II., p. 136; Vol. III., p. 338; Vol. IV., p. 357), in two of which the disease was observed to be associated, as in this

case, with chronic rheumatic arthritis; in one gout occurred singly. In each of the above cases in which the disease co-existed, they preserved their characters distinct and separable as in this. In all of these cases the deposit has been examined microscopically and chemically, so that its characters have been fully established. The first of these cases has been quoted by Dr. Adams in the second edition of his work, in which he expresses views identical with mine with reference to them. The only other communication which occurs on this subject in our Transactions is published in Vol. III., p. 353, by Dr. Biggar. In that case many remarkable features of rheumatic arthritis are described as those of gout, while positive evidence of their chemical or microscopic characters is wanting. Having, however, seen these specimens referred to at the time of their exhibition to the Society, I do not hesitate to say that they presented all the distinctive characters of chronic rheumatic arthritis, and of that disease only. No evidence whatever of gout existed in them, and consequently the reasoning based on their characters is of no value.

The case I have now detailed to the Society is the only one in which I have seen the patient presenting this combination of disease during life, and I freely admit my failing to diagnose the combination—a failure induced by the fact that such combination is very rarely seen, hitherto only in the cases I have referred to, and that in this case the predominant features of the case were those of arthritis, as these casts prove.—*March 20, 1875.*

Cardiac Disease; Sudden Death.—DR. QUINLAN said: I have the honour to exhibit a specimen of a heart taken from the body of a girl of seventeen, who was admitted to St. Vincent's Hospital about ten days ago. Upon admission she complained of a good deal of difficulty of breathing. There was a great appearance of venous congestion in all the veins in the body that were visible; but there was no appearance of congestion of the lung. The phenomenon that attracted the most marked attention was a very strikingly-marked pulsation in the veins of the neck. In the subclavian vein, the jugular vein, and the external jugular vein, the pulsation was very well marked, and it was exactly synchronous with the wrist-pulse. This state of things, along with feebleness of the pulse, at once indicated to the most inexperienced observer that there was, in the first place, an interference with the function of the tricuspid valve, and the weakness of the pulse showed stenosis of the mitral orifice. The sphygmograph was used, and we obtained the tracing I now exhibit, which is characteristic of mitral valve disease. It is not necessary to refer to the details of treatment. Suffice it to say, by rest and sedatives, the patient greatly improved. However, knowing the treacherous character of the disease, a very cautious prognosis as to sudden death was

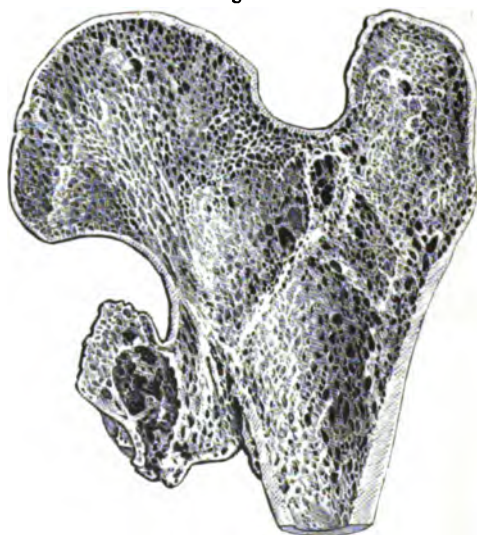
given, and this was justified by the circumstance that last Monday night the patient expired with awful suddenness. On Sunday she was quiet and comfortable, and the congestion greatly removed; and yet, on Monday night, having got out of bed, she suddenly fell on the floor, and was taken up dead. Upon opening the pericardium, we found about twelve ounces of serum—about the quantity we would expect to find in a case of this obstruction of the circulation. Upon looking to the heart, the first thing that struck us was that the apex was not formed by the left ventricle. The right and left ventricles appeared to share alike the formation of the apex; and, if the case had gone on a little longer, it would have become an almost bifid heart. There is a certain diminution in the size of the aorta. Looking to the right ventricle, we see, at once, what was the cause of death. There was a large embolus found in the ventricle, and part of this embolus was of a thick and fleshy character; it was entangled in the tricuspid valves. The tricuspid opening is large, and there are little warty vegetations upon it. Looking at the left ventricle, you will observe the mitral valve disease in a very exaggerated form. You cannot pass the little finger into the opening; and on looking into it from the aspect of the left auricle, you see its crescentic shape and extremely small size. By no amount of force, short of what would cause laceration, could you get the point of the little finger down the left ventricle. The walls of the left auricle are greatly hypertrophied. It appears to me that this case was a very simple one; and the one practical observation I wish to make upon it—and it is a most important point—is that, whilst there was a loud systolic bruit, there was no presystolic bruit whatever. We examined the case again and again in the most careful manner, but could not find it. The explanation of the case is this—we had this stenosis in existence. This interfered with the passage of the blood from the left auricle to the left ventricle, which accounts for the diminution of its size and the appearance of the apex of the heart, and accounts also for the gradual contraction of the aorta; and, as a natural sequence, there was a great expansion of the right ventricle. The tricuspid opening was enlarged, and at each systole as much blood was sent to the right auricle as went to the pulmonary artery, and that accounts for the venous pulsation. This, of course, involved a great deal of disturbance in the circulation; and, when in this disturbed state the patient made an attempt to get up, the embolus, which was fixed in the tricuspid opening, suddenly completely blocked it up, and immediate death was the result. The patient fell down on the floor as if shot. The hypertrophy of the left auricle shows the effort nature had made to compensate for obstruction caused by the stenosis of the left auriculo-ventricular opening.—*April 10, 1875.*

[illegible]

Fig. 1.



Fig. 2.



Extra-capsular Impacted Fracture of the Neck of the Thigh Bones. Exceptional Mode of Impaction.—DR. E. H. BENNETT submitted to the Society a specimen of impacted fracture of the neck of the thigh bone, which is represented in the accompanying woodcuts. He said:—

I possess no life history of this specimen, but I consider that its exceptional characters are sufficient to justify me in occupying the time of the Society while I briefly describe them.

In the common variety of impacted extra-capsular fracture, the upper fragment penetrates the lower, and in extreme cases the line of compact tissue exposed at the lower side of a vertical section of the neck may be seen to penetrate across the cancellated tissue of the trochanteric region of the bone, so as even to reach its outer wall.

The rarity of specimens of impacted extra-capsular fracture in which these conditions are reversed, may be inferred from the following passage of the late Professor Smith's work:—"

"There is a very remarkable variety of the impacted fracture external to the capsule, of which I have seen but one example; in this the lower fragment penetrates a short distance into the cancellated tissue of the superior, the reverse of what generally happens. . . . Its occurrence must depend upon the direction in which the force which broke the bone was applied, but, unfortunately, I am not in possession of the history of the specimen represented in the preceding woodcuts."

We find no reference in Professor Smith's description which might indicate where this specimen was to be found, but I have been able to identify the woodcuts with a specimen which exists in the museum of Dr. Steevens' Hospital, where it was probably placed by the late Professor Colles, but without any history being attached to it.

In the specimen on the table the remarkable external features of the bone, viewed from behind, as seen in Fig. 1, are—first, the depression of the head and neck of the bone, while the normal angle of the neck and shaft is preserved; secondly, a very slight rotation of the shaft outwards; and lastly, distinct evidence of a fracture separating the lesser trochanter and traversing the posterior inter-trochanteric space. An examination of the front of the specimen shows that a fracture existed along the anterior inter-trochanteric line, and that the lesser trochanter was detached. The most remarkable of these features is the depression of the head and neck without any material change in the normal angle formed by the neck and shaft. At first sight but for the deformity of the lesser trochanter the nature of the injury might readily escape notice, the eye being deceived by the apparently normal sitting on of the neck. If, however, we look to the relations of the summits of the trochanter major and of the head, we see that the former stands slightly above the

* A Treatise on Fractures in the Vicinity of Joints, &c. Page 35.

latter, an alteration of the normal relation which must be due to fracture of the neck. In examining the surface of the trochanter major we meet with no sign of any fracture which could have detached it from the shaft, or in any way altered its position. On looking to the section (represented in Fig. 2), the explanation of the external characters is easily seen; the head and neck, separated from the shaft by a fracture, have slid down on the inner side of the shaft, so that the line of compact tissue of the inner wall of the neck overlaps that of the shaft, instead of being buried, as in ordinary extra-capsular fractures, in the cancelli of the trochanteric region.

The lesser trochanter was in part or entirely detached from both fragments, and has been reunited with but little of the usual excess of callus. A dense line of cancellated bone, crossing obliquely upwards from opposite the centre of the base of the lesser trochanter towards the digital fossa of the great trochanter, marks the upper surface of the lower fragment buried within the base of the neck.

A comparison of the appearances seen in this section with the figures of the similar sections published by Professor Smith and by Mr. King^a shows that the essential characters of all three are alike. The rarity of this specimen and its close agreement with the instances published by Professor Smith and Mr. King—the only other specimens hitherto published—make the record of this case in our Transactions desirable. The specimen will be preserved in the Museum of Trinity College.—*April 17, 1875.*

Fractures of the Cervix Femoris.—DR. E. H. BENNETT laid on the table three specimens of this injury, and described them as follows:—

I submit these specimens to the notice of the Society, as they illustrate points still the subject of controversy with reference to fracture of the neck of the thigh bone.

The first (a) is a specimen of bony union of intra-capsular impacted fracture of the neck of the femur. I can give no life history of the specimen; it has been long in the Museum of Trinity College, but has only recently been brought to light. It even escaped the observation of the late Professor Smith, who would, had he seen it, gladly have added it to his list as another instance confirming the conclusions arrived at by him with reference to the occurrence of bony union in intracapsular fracture—namely, that the fracture is impacted, and that the impaction persists and is effected by the penetration of the lower into the upper fragment chiefly. This specimen repeats in all points the essential phenomena of the cases hitherto described of bony union, now sufficiently numerous. It is the fourth that has been laid before this Society, and is the fifth in the collection belonging to the University. The same characters pervade

^a *Cyclopædia of Practical Surgery.* Vol. II., page 273.

all, and my object in presenting the specimen to the Society is simply to record another instance in support of the rule to which I do not as yet know an exception. The fracture was in this case, without doubt, entirely within the capsule, a fact which some authorities desire to question in every case of bony union of fracture of the neck of the thigh bone above its base.

The second (b) and third (c) specimens are instances of fractures of the neck of the femur, in which in the recent state permanent inversion of the limb was observed. I dissected both bodies myself, but of the details of the injuries, other than anatomical, I know nothing, except that both must have occurred long before the death of the individuals. The specimen (b) is an extra-capsular impacted fracture, with fracture of the great trochanter; both the primary and secondary fractures are completely united, and the union is clearly of very old date. The relation of the neck and shaft has been greatly altered, so that an acute angle has been formed at their junction, an expression of the degree of shortening of the limb which was observed in the recent state. The great trochanter appears to have been detached by a fracture which passed from its upper and anterior part downwards and backwards; it has undergone great displacement backwards, viewing its relation to the shaft in the dry bone; or, in other words, the shaft has separated from the trochanter in its rotation inwards. One fact further deserves notice, the position of the upper extremity of the lower fragment, displaced so as to be directly in front of the lower extremity of the upper—the rule laid down by Dupuytren as prevailing in these exceptional cases of inversion of the limb. The dissection throws no further light on the cause of the inversion than I have expressed. The body was greatly emaciated, and the muscles so wasted that all were alike nearly reduced to membrane. The limb was shortened nearly two inches, and had evidently not enjoyed any great range of movement, for the head, slightly rheumatic, was not at any point polished by friction against the acetabulum.

The attitude of the limb, combined with the projection backwards of the great trochanter, caused the deformity to assume the characters of a dislocation of the femur on the dorsum ilii; but no difficulty in making a correct diagnosis previous to dissection was experienced, simply because the body was wasted so extremely that the characters could be read almost without handling the limb.

The third specimen (c) is a case of intra-capsular fracture ununited; the only difficulty presented by this specimen when the dead body was first examined was the inversion of the limb; saving this character the usual features of an old fracture, with absorption of the neck of the bone, were present. It was easy to move the limb in any direction except that of rotation outwards, and it could be drawn down a little so as to diminish the shortening, a feature very characteristic of such

fractures. I dissected the joint with care, to determine the cause of its exceptional position, and I think the innominate bone and the macerated fracture still enable me to demonstrate the cause. The lower fragment drawn upwards, and brought into contact with the brim of the acetabulum, has caused absorption of the cotyloid ligament and of the brim of the cup. Against this depression the irregular extremity of the lower fragment lay, so as to be restrained from rotation outwards. The characters of this specimen are clearly of but little importance practically, as they could not have been developed until long after the occurrence of the accident.—*April 17, 1875.*

Aneurism of the Aorta.—**DR. HAYDEN** said: I have to exhibit to the Society an example of aneurism of the false consecutive kind, engaging the upper part of the arch of the aorta. The subject of the disease, a labourer, fifty-four years of age, who had been very intemperate, but latterly not so, apparently well nourished and of ruddy complexion, was admitted into hospital in the early part of last February. The history obtained from him was, that he had been generally healthy, with one exception, namely, that two years previously he had an attack of bronchitis, which was accompanied by slight hæmoptysis. About five weeks before the day of his admission to hospital, he noticed for the first time that his voice was husky, and a fortnight later he observed a prominence in front of his chest. When I first saw him his condition was, shortly, as follows:—Breathing very easily accelerated, even the act of sitting up in bed quickened it, and then it was more or less stridulous. The stridor was mainly from below. The voice was more or less husky; his pulse was regular, from 84 to 100; it was not equally full on the two sides, being less strong on the right side than on the left. On the upper part of the chest, at the right side of the sternum, and occupying the second right intercostal space, there was a soft tumour, of a conical figure, yielding a double impulse, the first pulsation beat being more or less expansile, and accompanying the impulse of the heart, but slightly posterior to it; the latter was a distinct pulsation of arrest. The tumour was two inches in diameter, and projected an inch and a-half in front of the chest. The chest wall was dull to the extent of two inches on each side of the tumour. There was no difference in the pupils, no venous engorgement or pulsation in the veins of the neck, no œdema of the neck or face. The man felt pretty well, and at first insisted on being out of bed, but, with great difficulty, I succeeded in inducing him to remain quietly in bed. He was put under treatment, consisting mainly of tincture of perchloride of iron in large doses. A careful examination of the chest yielded the following results:—The chest wall was clear throughout, except in the vicinity of the tumour. The fourchette of the sternum was dull and somewhat projected, and

there was in this situation a distinct tracheal sound. In the right scapular region respiration was bronchial. His condition underwent little change till the 18th of March, when Dr. Nixon took the tracings of the two pulses which I exhibit, and which are fairly representative of the aneurismal pulse. Two days after these tracings were taken there was a noticeable change in the man's condition. The right pupil was contracted in an extreme degree; there was œdema of the right side of the neck and the right arm, and the right radial pulse was now but faintly perceptible. The tumour had also advanced very considerably. It was now six inches in diameter, and in place of being conical it was spherical, and equally prominent, except in one place, where there was, as it were, a nipple on the surface, and here it was soft and yielding. Throughout the tumour continued to yield a double impulse. It also continued to yield two sounds corresponding with the sounds of the heart, with this exception, that the first aneurismal sound was less clear than that of the heart. The cardiac impulse was felt in the normal position. It was exceedingly feeble. On the 22nd of March the right clavicle was found to be dislocated upwards to fully two inches above the normal position, and the sternal end of the sterno-mastoid muscle was raised up with it. The upper part of the sternum was also pressed forward, and the tumour now projected above the sternum. The impulse of the tumour was now much more faint. The sounds were less distinct, and the surface of the tumour less yielding, except at the nipple-like point mentioned. About this time a consultation was held on the case, and the man was strongly urged to allow galvano-puncture to be tried, with the view of inducing coagulation in the sac. The tumour was now pressing on the trachea, and the breathing was stridulous. He would not consent to the experiment. He died on the morning of the 10th, having for some hours previously suffered from the most urgent laryngeal distress. There was no difficulty at any time in the diagnosis of the case. It was a typical example of aneurism; but it presented some peculiar features, in consequence of which I proceeded to make the dissection with very considerable interest. I should have mentioned that on the 8th of March a harsh, dry, and metallic cough was added to his previous symptoms. There was no history, nor were there any symptoms or signs, of phthisis. A good example of diffuse miliary tuberculosis of both lungs was, nevertheless, presented; they are studded over with small grains like shot. I cannot find anywhere a caseous nodule from which secondary tuberculosis might have arisen. There is a slight thickening of the pleura at the apex of the right lung. The heart is large, remarkably fatty and soft. The right ventricle is considerably dilated, and the left ventricle hypertrophied. The aneurism commences just above the valves, but the valves, themselves, when tested by means of water poured into the aorta proved quite competent. At

the upper portion of the ascending part of the arch, and engaging the *arteria innominata*, there is an aneurism as large as the head of an infant; it consists in a general expansion of the vessel. On the right side the descending cava is incorporated in the sac, and nearly occluded. In the direction forward the tumour had absorbed the sternum, and left an irregular opening in the bone; it had also eroded the ossified cartilage of the first rib, the extremity of which had been detached, and lay loose in the sac. The clavicle had been dislocated and its cartilage of incrustation partly absorbed. In front of the sternum a diffused false aneurism had been formed beneath the pectoral muscles and fascia. Thus there were two aneurisms—one intra- and the other extra-thoracic. The sac contains a mass of fibrin more or less laminated in arrangement. These superimposed laminæ bound a central cavity, which, superiorly, forms a dome or *cul de sac*. In the lower portion of the aneurism this fibrinous shell became detached, and the blood infiltrated between them had pressed upon and absorbed the sternum. The artery is studded in the interior with atheromatous matter. The *arteria innominata* on the right side and the left carotid artery on the left spring from the aneurism, but the left subclavian artery is free. The frequent escape of the left subclavian artery in such cases has been noticed by Laennec. The subclavian springs from the vessel immediately beyond the sac. I had been very anxious to discover the sympathetic nerve on the right side, but failed to do so. I can only speculate, therefore, on the cause of the contraction of the right pupil. Manifestly this sac had come to press on the right sympathetic cord, causing paralysis of the nerve, and so, contraction of the pupil. There was drooping of the right upper eyelid, also congestion of the right conjunctiva, and a difference of temperature on the two sides. On the 8th of March the temperature in the right axilla was 98° ; in the left axilla it was 97° . On the following day we again registered the temperature, taking it now from the auditory meatus. At the right side it was 97° , and on the left 93.4° . Thus, all the results of the paralysis of the sympathetic nerve were exhibited, except unilateral sweating. The pneumogastric nerve on both sides was remarkably hypertrophied, and one of the branches of the anterior coronary plexus was hypertrophied.

The trachea showed the cause of the tracheal symptoms referred to. The tumour projects into the anterior right surface of the trachea; it likewise made pressure upon the superior branch of the left bronchus. It affords a full and satisfactory explanation of what is often a puzzle to stethoscopists—all practical physicians are aware that when pressure is exercised on one of the bronchial tubes there is often a marked inequality of respiration over the lung on that side; it is in many cases affected in the upper part, whilst distinct in the base. This is manifestly due to the pressure being exercised mainly upon the superior primary branch of the

bronchus. There is another condition in this case which is noteworthy—distinct œdema of the glottis, a most unusual circumstance in aneurism. It is not easy to account for this, but it seems to me that the pressure exerted on the nerves and returning veins from the larynx may serve to explain it. It no doubt aggravated the poor man's suffering, and in some measure precipitated his death.—*April 17, 1875.*

Scrofulous Disease of the Kidney.—DR. BARTON said: This is a contribution to the pathology of the urinary organs of a somewhat unusual character. A man, aged forty-seven, a printer, a very thin, emaciated-looking man, presented himself on the 16th of March last, complaining of frequent micturition, accompanied by a hot, burning pain on passing water. This pain commenced about the middle of the flow, and increased towards the termination, and in a few minutes after subsided. He said he never had pain in the glans penis, or a sudden stoppage of water, but frequent micturition, increasing until he got little sleep at night, and in the day he was frequently called on to pass water every quarter of an hour. In ten minutes after passing water the urgent feeling began to return, and compelled him to seek relief in micturition. This had been going on for the space of a year. His symptoms commenced with a burning pain on passing water, and although not so severe as at the time he presented himself at the hospital, it had been more or less of a similar description ever since. In August, 1874, he, for the first time, was obliged to retain his water for a longer time than usual, and when he did micturate he found he was passing pure blood, and this continued until the next day. At no other time did he pass blood. It occurred to me that there was a stone in the bladder, and I asked him was he sounded. He said he had attended Dr. Meldon, who made a similar recommendation, but he declined to submit to the examination. He was a very intelligent man, and said that he had read up the subject of stone, that he had no pain in the penis, and no sudden stoppage of water, and that he was satisfied there was no stone. However, I passed a sound, and found he was quite correct. He had no stone. The question then was, what was the cause of these symptoms? On an examination of the urine, we found there was evidence of the degeneration of the kidneys. The specific gravity of the urine was 1006; it was highly albuminous, and a considerable layer of blood was deposited after the urine had stood for some time. Ropy mucus and pus were also found in the urine. The case continued to get worse, in spite of any treatment we could adopt, and he died three weeks after admission, the irritation of the urinary organs increasing up to the time of death. The question was, what could be the cause of this? There was evidently congestion of the bladder, inflammation of the lining membrane, but there was no stricture of the urethra, nor any enlargement of the prostate gland. We found

the right kidney presented numerous small abscesses of a strumous character throughout the body of the gland; the other was reduced to a congeries of dilated cysts filled with pus. We next examined the ureters, which presented some unusual features. We found them not simply dilated, as they would be in a case of stricture, but remarkably thickened; they were so thick as to give all the feel of a strictured urethra, and evidently lymph had been shed along the course of the ureters; while not dilated in the canal, they were greatly thickened in the coats, so as to present the thickness of a male urethra. On either side a similar change of structure had taken place, with this difference, that on the right side there was no opening from the ureter into the bladder. Whether it was closed up by the extension of inflammation later I cannot say, but a probe passed in could not be got into the bladder without forcing it through the mucous membrane. The bladder itself was found greatly contracted, the muscular coat greatly hypertrophied, and the mucous coat very much thickened and thrown into pouches. We found that at the base of the bladder there was an abscess, which abscess was of a chronic character; a quantity of strumous matter exuded from it on pressure, coming out at the side of the prostate, and this abscess had pressed upon the bladder, and caused the obstruction which kept up the frequent micturition. At least I think it must have had rather an early place in the sequence of events which caused the excessive irritation that existed throughout the bladder, ureters, and kidneys. The case may have commenced with an abscess in the bladder; this extended to the kidneys, and subsequently the slow extension of the inflammation may have caused the shedding of lymph along the ureters and the bladder. The case is interesting, chiefly as showing that such a state of things may occur as considerable thickening of the ureters, accompanied by abscess in the kidneys and bladder, and may point out what may be the cause of the group of symptoms which existed here, and which, though not unusual, is generally produced by other causes.—*April 24, 1875.*

Uterine Fibroid.—DR. ATTHILL said: This specimen is a remarkable example of an uterine fibroid, or what was once a uterine fibroid, for there is not the slightest trace of any fibrous structure in the tumour I now exhibit, as the word fibroid would indicate. We have no history of the patient from whom this specimen was taken, at least as far as the uterine organs are concerned. She was admitted into the Adelaide Hospital, on the 17th of April, in an advanced stage of pneumonia, and died the next day. It was only on making a *post mortem* examination that attention was drawn to the uterus. The woman from whose body this specimen was removed was sixty years of age. In all probability she never suffered from any uterine symptoms, for the tumour is of the

form known as sub-peritoneal, and the uterus itself was of normal size. The tumour, which is of the size of an orange, was situated on its anterior surface; once it was a fibroid, now it is a solid calcareous mass. On the posterior surface there is a true fibroid of small size, but even in it there is a calcareous deposit at one end; there is also a third tumour, the size of a bean, attached to the fundus, converted into a purely calcareous mass. The Society are aware that uterine fibroids are liable to various changes and alterations in structure; they may become œdematous, may undergo fatty degeneration, or be absorbed; and, finally, are liable to the deposit of calcareous matter. It is not at all uncommon to meet with cases in which a certain amount of calcareous deposit has occurred; but this is the first instance in my experience where the entire tumour had been converted into one solid mass of calcareous matter. If this tumour had grown inwards instead of outwards, it might have been removed; such tumours have been described by old writers as uterine calculi. I may add that in the liver there was a cyst, in which also calcareous deposit had occurred, but it had not been converted into a solid mass; the calcareous deposit formed a shell, enclosing a central cavity, so that it differed from the metamorphosis which had taken place in the uterine tumour. In addition to being interesting as a pathological specimen, this tumour was of value in a practical point of view, showing, as it does, how nature sometimes cures these tumours, and that consequently we should not interfere with them by operative means unless the symptoms are very urgent indeed.—*April 24, 1875.*

Acute Articular Rheumatism ; Pericarditis ; Acute Gastro-duodenitis.—**DR. MACSWINEY** said: The morbid specimen which I present to the Society was removed from the body of a woman, aged thirty, who died three or four days ago in Jervis-street Hospital. Her history, as far as affects her medical state, was, as related by her, that about four years ago she had been an inmate of the Meath Hospital, under the care of Dr. Foot, suffering at the time from rheumatic fever. She went through the disease, and recovered sufficiently well to be able to follow for four years her avocations as a domestic servant. She understood that at the time she was in the Meath Hospital her heart was affected. When she entered Jervis-street Hospital she was suffering from extremely high fever. Her principal joints were swollen, red, and hot, and excruciatingly painful, and she had all the symptoms of fever—pulse quick, tongue coated, thirst, and sleeplessness. She was suffering, in fact, from rheumatic arthritis of an acute character. There was marked pericarditis, and the ear, applied over the surface of the heart, perceived at once a to-and-fro rubbing sound, which was extremely characteristic. For ten days her state appeared most precarious; death appeared imminent several times, principally from asthenia; there was extreme

weakness, and frequently she was almost pulseless for hours. Out of this state, however, she recovered sufficiently to, for some time, render it likely she might probably again rally. However, a fortnight ago she began to complain of extreme distress and pain in the right side, in the situation of the liver, and pressure, or the slightest touch, indeed, over that region caused her acute suffering. It was easy to perceive that the tissues there were hard and apparently somewhat swollen. At the same time her appetite completely failed, and she ceased to take any solid food at all. She complained of intense thirst, sleeplessness, great pain in the right side, inability to swallow any solid substance. She had constant, most distressing, and uncontrollable vomiting, and after a time it became clear that she was about to die. About five or six days before her death fluid was recognised in the peritoneal cavity, and finally she fell into a sort of drowsy state, partly comatose, partly insensible, and quietly expired in that condition. I now produce the heart, covered by the pericardium; also the stomach and the duodenum. The left auriculo-ventricular opening is greatly contracted; the aperture does not admit one finger—it is a mere slit. There were some adhesions between the pericardium and the heart, but there is not any great evidence of considerable adhesions between these opposed surfaces. They are but very partially adherent. The sac of the pericardium was filled with fluid; the peritoneum also contained a large amount of fluid, and both pleural cavities were occupied with a similar liquid; in all instances this fluid was straw-coloured and clear; it had no particles of lymph or other matter floating through it. As to the physical signs which such a condition of the valve would be expected to give rise to, I am not in a position to state with perfect certainty where the exact situation of the cardiac bruit, which was audible, should be located—that is, where, *in point of time*, it should be placed. There was a bruit, and it was feeble, and her state during the entire time she was in hospital was so delicate, and the slightest examination disturbed her so much, that, intentionally, no accurate examination was made by me of the precise nature of this bruit, and I cannot say further than that it was a soft bruit, was feeble in tone, and was situated at the apex of the heart, below, and slightly to the left of the left nipple, and was much more expressed at one time than at another, being sometimes, indeed, inaudible; at least, I could not then perceive it at all. Whether it was distinctly systolic, I am not prepared to say with precision, but my impression is that it was strictly post-diastolic. The heart did not present any other lesion of particular interest, but the stomach and duodenum exhibited appearances which were very remarkable. At the time of its removal the mucous membrane of the interior of the stomach was very red—in fact, quite scarlet—precisely as if the individual had died from some irritant poison. A similar colour prevailed in the interior of the œsophagus, and the

condition of the duodenum was quite novel to me in connexion with organic disease of the heart—it was greatly contracted, thin in structure, and quite purple in colour from blood-congestion. It was soft, and broke away upon making slight traction upon it, and appeared almost in a gangrenous state. The stomach itself was very much contracted in size. What was the cause of this intensely-congested condition of the stomach, and the contracted, discoloured, and gangrenous state of the duodenum, I am not prepared to say; but I would make this remark, that the woman had not partaken of food to any extent for a fortnight before her death, and in recorded cases prolonged abstinence has been followed by a condition of the gastric organs not at all unlike what existed here. In many instances of privation of food the intestinal tube has been found greatly contracted; but I can testify that, in this case, no other part of the tube was narrowed or altered from the normal condition, save fourteen inches of the duodenum, and perhaps a small part of the jejunum. The liver was greatly engorged with blood, and was a well-marked instance of that condition known as the nutmeg liver, where the organ, however, was not very much, nor abnormally, enlarged. On the whole, I am disposed to regard the condition of the digestive organs here as indicating the presence of acute gastro-duodenitis—a rare disease—arising in the progress of pericarditis, and terminating fatally.—*April 24, 1875.*

CLINICAL RECORDS.

Notes of Cases in Practice. By R. FITZMAURICE, L.K. & Q.C.P.I., L.R.C.S.I., &c.; Physician to County Kerry Fever Hospital.

A Peculiar Case of Scrofulous Affection.—The illness of Mrs. —, aged thirty-two, extended over a period of four years, and terminated fatally in July, 1873. She first complained of hoarseness or loss of voice, and on examining with the laryngoscope some rounded yellow ulcers were discernible in the neighbourhood of the glottis, which had a granular appearance. There was no disease apparent within the larynx. A few applications of a 4-grain solution of nitrate of silver cured the ulcers, and a bit of wadding tied on a curved piece of whalebone, and saturated with the same solution and passed into the larynx, restored the voice. She was put on decoction of bark and hydriodate of potash and nutritious diet, but notwithstanding every attention to local treatment and to her general health by selection of residence, &c., the ulcers would occasionally appear, and after a time the epiglottis became engaged, and slowly ulcerated away. About the same time ulcers formed at the root of the tongue, all of which were cured, leaving a permanent granular state of the glottis, with freedom from laryngeal disease, restoration of voice, and complete power of swallowing. Her pulse throughout her illness was always over 100, and, though very thin, she had for a long time a good appetite, and was able to take active exercise and walk about. With the epiglottis away, and small, if any, tonsils, and a most submissive patient, there was a remarkable view of the interior of the larynx and the rings of the trachea by reflection. At times I found that a superficial ulcer at the root of the tongue, or in the vicinity of the glottis was undetected, unless the laryngoscopic examination was made under a clear sunlight, which showed the colour of the surface of the ulcer, the adjacent parts being red; but when once found and its whereabouts ascertained, it was then easily recognised with lamplight and touched with a local agent. At a time when the affection appeared to put on a curative action at the lower part of the throat it settled in the most tenacious manner on the fauces, posterior nares, and uvula, instead of passing into the larynx, as was expected, constituting phthisis laryngea. The same little rounded ulcers, with red areola, appeared on those parts; the uvula came away with a slow granular form of ulceration, and the disease extended to the posterior nares, the mucous membrane of which became puffed and swollen, causing deafness from obstruction of the Eustachian tubes. There was some foetid discharge, and caries of the vomer and turbinated bones, several pieces of which came away and were taken out with curved forceps. A creeping ulceration attacked the face, burrowing

under the skin and through the lobe of one ear. The sinuses were laid open and touched with nitric acid, which healed them, but the carious state of the bones of the back of the nose increased, the nasal bones escaping. She then got scrofulous disease of the wrist-joint and chronic peritonitis, with ascites—the latter was completely removed by an attack of diarrhoea that continued for some weeks. The discharge from the nose was very unpleasant, and though frequent injections by carbolic acid and chloride of lime were used through the posterior and anterior nares with a curved gum-elastic catheter attached to an elastic bottle, it continued unabated and most offensive to the end, and she ultimately sank emaciated and worn out from a disease that showed a most extraordinary affinity for the osseous system, and resisted every kind of treatment.

Remarks.—This case is, I think, peculiar from its persistent nature in, I may say, a young woman, in its tendency to attack the bones, and in the course it pursued, which was conclusive, I think, as to the nature of the case. She had the advice of some of the most distinguished metropolitan men, had every advantage of change of air to the sea-side—Lisdoonvarna—lived in a most healthy country-place, and had a fair trial given to every suitable form of tonic; but, notwithstanding all, the disease went on slowly but surely to a fatal termination.

Case of Excessive Vomiting in Pregnancy.—Mrs. —, aged about thirty, three months pregnant of first child. After sitting for some time on grass, got pain at lower part of abdomen, for which a mustard poultice was applied, which gave relief, but very soon vomiting set in and continued almost unceasingly for five or six weeks. Her pulse was quick, tongue white; diarrhoea; abdomen very flat, and excessive emaciation. Everything that could be devised was tried to check vomiting, and everything in the way of food was rejected, and the only thing retained was soda-water and brandy, and she therefore had to be fed with enemata of beef-tea and port wine during most part of her illness. The hypodermic injection of morphia twice a day was the great means, under Providence, of her recovery, and she was also benefited by enemata of bromide of potassium. It was in contemplation to cause abortion, but the distinguished President of the Dublin Obstetrical Society, Dr. Atthill, who saw her in consultation, was opposed to this measure on the grounds of a further complication (her case being so serious) being attended with danger to life. After a protracted illness which brought her to death's door she made a good recovery, had a premature confinement after a sea voyage, and is now strong and healthy. This case is briefly given to bear testimony to the great value of the hypodermic injection, to which her recovery was almost mainly attributable. An extempore solution of acetate of morphia, half a grain to the drachm of water, I found more effectual than the combination of morphia as given in the Pharmacopœia.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.R.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
September 11th, 1875.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Small-pox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fa-	Diarrhoea	
Dublin, -	314,666	748	567	—	20	5	4	17	17	60	23·4
Belfast, -	182,082	498	381	—	19	20	3	5	10	35	27·2
Cork, -	91,965	193	138	—	1	8	—	2	3	7	19·5
Limerick, -	44,209	99	56	—	—	—	—	1	2	2	16·5
Derry, -	30,884	61	43	—	—	15	—	—	—	—	18·0
Waterford, -	30,626	49	62	—	—	—	—	—	—	8	26·3
Galway, -	19,692	42	22	—	—	—	—	—	3	—	14·5
Sligo, -	17,385	43	17	—	—	—	—	—	1	—	12·8

Remarks.

The rate of mortality was rather high in Belfast and Waterford, moderate in Dublin, and low in the other towns. In London it was 22·0 per 1,000 annually, in Glasgow 25·3, and in Edinburgh 22·5, during the four weeks. Zymotic diseases generally exhibit a decided tendency to increase in Dublin, although scarlatina is apparently dying out as an epidemic. Diarrhoea was fatal amongst children in Dublin, Belfast, and Waterford. Scarlatina has increased in Belfast, Cork, and Derry, where it is very prevalent and fatal. The epidemic in Cork seems to be but commencing, as 7 out of the 8 deaths registered in the four weeks occurred in the week ending September 11. In Dublin zymotic diseases caused 142 deaths, of which 115 took place within the municipal boundary. The corresponding numbers in the previous four-week period were 93 and 78 respectively. The increase was chiefly due to diarrhoea, which killed 60 persons against 14 in the four weeks ending August 14. Of the 60 victims, 46 were children under 5 years of age.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for Month of August, 1875.*

Mean Height of Barometer, - - -	30·024 Inches.
Maximal Height of Barometer (9 p.m. on 21st),	30·289 „
Minimal Height of Barometer (9 a.m. on 10th),	29·647 „
Mean Dry-bulb Temperature, - - -	60·2°
Mean Wet-bulb Temperature, - - -	57·1°
Mean Dew-point Temperature, - - -	54·4°
Mean Humidity, - - -	81·3 per cent.
Highest Temperature in Shade, - - -	73·4°
Lowest Temperature in Shade, - - -	46·6°
Lowest Temperature on Grass (Radiation), - - -	43·0°
Mean Amount of Cloud, - - -	62 per cent.
Rainfall (on 14 days), - - -	1·883 Inches.
General Direction of Wind, - - -	W., S.W., and E.

Remarks.

Fine weather held at the beginning of the month, but on the 6th cloudy and rainy weather set in, with an easterly breeze. A depression, whose centre, at 8 a.m. of the 9th, lay over the Bristol Channel, caused a heavy rainfall in Dublin and many parts of Ireland. From the 14th to the 23rd the weather was dry in the E. of Ireland, but in the W. frequent rains fell, with fresh S.W. and W. winds. Intense heat prevailed in France and England on the 15th, 16th, and 17th—the London maximum being 89° on the 16th. No excessive heat was experienced in Dublin. The month was, however, considerably warmer than July—the minimum not sinking below 60° on 3 nights, and the maximum exceeding 70° on 5 days. It was showery from the 27th, with high westerly wind on the 30th and 31st. No thunder or lightning was observed. Hail fell on the 16th in a very local shower of peculiar severity. Beautiful lunar rainbows were seen at 10 p.m. of the 16th, when drizzling rain was falling to the N.W. of Dublin.

PERISCOPE.

Edited by G. F. DUFFET, M.D., F.K.Q.C.P.

IMMOVABLE APPARATUS IN ACUTE ARTICULAR RHEUMATISM.

DR. S. SCAPARI concludes from his experience that immovable apparatus made either with plaster of Paris, silicate of potassium, or starch, are exceedingly useful when applied to the affected joints in acute articular rheumatism, although they certainly have no influence upon the disease itself. If on the appearance of the first symptoms these applications are made to all the joints, sound and affected, they seem to exercise an abortive effect, preventing the appearance of the affection in some of the joints, and calming and arresting the manifestations already developed in others. Dr. Scapari even goes so far as to assert that the spread of the disease is diminished, as well as the probability of concomitant complication on the part of the serous membranes, the heart, and the lungs.—*Bull. Gén. de Thérap.*, No. 10, 1875; from *Raccoglitore Medico*, No. 3, 1875.—*Philadelphia Medical Times*.

ARTERIO-CAPILLARY FIBROSIS.

DR. MACLAGAN, of Dundee, in a paper on "The Pathology of Granular Contracted Kidney" (*British and Foreign Med. Chir. Rev.*, July, 1875), says, that at the time Sir William Gull's and Dr. Sutton's paper on "Arterio-Capillary Fibrosis" was published, he had just completed the translation of MM. Charcot and Bouchard's treatise on "Cerebral Hæmorrhage," in which they describe a condition of the minute cerebral vessels which they term "sclerous arteritis;" the similarity of their description of this morbid condition, and that of Sir William Gull and Dr. Sutton immediately struck him, and three years further experience has confirmed him in the belief that the French and English pathologists have described identical conditions, any little differences being due to the fact that the former were studying cerebral hæmorrhage, and the latter chronic Bright's disease; and further adds that he believes that Sir William Gull and Dr. Sutton have described a really morbid condition, but err in looking upon it as a factor in Bright's disease, its co-existence with the latter in any particular case being merely a coincidence; the two conditions, however, being both rather common in old age, may, from this cause, be present together, and thus the error may have arisen.

As regards the points at issue between Dr. George Johnson and Sir William Gull and Dr. Sutton, Dr. MacLagan believes—1st. In the

presence of muscular hypertrophy of the arterioles in granular contracted kidney, but differs from Dr. Johnson as regards its causation, holding that it is produced by a retention in the blood of some of the urinary excreta, followed by irritation of the vaso-motor nerves, spasmodic contraction of the muscular coats, and consequent hypertrophy. 2nd. He agrees with Sir William Gull and Dr. Sutton in the existence of "arterio-capillary fibrosis," or "sclerous arteritis," but differs from them in looking upon this as a morbid condition *per se*, and entirely independent of granular contracted kidney. 3rd. The two conditions must frequently co-exist, either predominating according to the priority of appearance, and often progressing side by side, the condition of "fibrosis" exaggerating the tendency to cerebral symptoms so frequent in chronic Bright's disease with contracted kidney.

R. A.

EXTERNAL USE OF TURPENTINE IN THE TREATMENT OF TONSILLITIS.

IN the *Leavenworth Medical Herald* Dr. S. H. Roberts strongly recommends the use of turpentine externally in tonsillitis. He folds the flannel to four thicknesses, wrings it out in hot water, and pours oil of turpentine over a spot the size of a silver dollar. The flannel is then applied over the sub-parotid region, and the fomentation continued as long as it can be borne. After removal, a dry flannel is applied, and the same region rubbed with turpentine every two hours. This application is continued daily till resolution occurs. The doctor believes, from the evidence of his long experience, that thus applied early in the disease the oil of turpentine has almost a specific effect in tonsillitis. That its action is not simply that of an irritant he has proved by employing mustard, croton oil, tincture of iodine, &c., in the same class of cases. They always failed to diminish the inflammation of tonsils, while the turpentine succeeded.—*Philadelphia Medical Times*.

THE TREATMENT OF CHRONIC DYSENTERY.

MR. R. DONALDSON, writing from Rangoon to the editor of the *Indian Medical Gazette*, June 1st, recommends the compound tincture of benzoin as a most efficacious remedy in dysenteric affections. He says that in Burmah dysentery is a very common affection, and in the European, as well as in the native, exhibits a marked tendency to become chronic. In many of these cases ipecacuanha appears to have little or no effect; and persistence in the treatment by large doses of this drug, so far from being productive of good, is fruitful of positive mischief. The stomach is rendered so irritable by it that the patient is unable to retain nourishment, and he then suffers from exhaustion, the combined effect of the disease and innutrition. In these cases the tincture of benzoin, given in combination with astringents—notably with logwood—has been found

extremely useful; often, indeed, acting like a charm; and it may be truly said of it, that its powers of healing diseased mucous membranes equal its performances when applied externally to wounds. The formula recommended is:—Compound tincture of benzoin, half a drachm; compound tincture of catechu, one drachm; tincture of opium, ten minims; extract of hæmatoxylum, ten grains; water, to one ounce. For a draught. To be given three times a day. If necessary, the remedy may be administered by the rectum. It would appear that the compound tincture of benzoin is an old, and, at one time, a well-known remedy in dysentery, as well as in simple mucous diarrhœa and in chronic infantile inflammatory diarrhœa, in which the evacuations always contain mucus, and sometimes a little blood.

THE RADICAL CURE OF VARICOSE VEINS BY THE INJECTION OF CHLORAL.

In the *Rendiconto Biennale di Clinica Chirurgica*, Milan, 1875, Dr. Francesco Parona reports ten cases of varicose veins of the legs, which were cured by injections into the varices of a solution of hydrate of chloral. In all the cases a cure resulted. One patient, who presented all the symptoms of paludal infection, was attacked by erysipelas a week after the operation, and died; but Dr. Parona does not think that his death was really owing to the three injections practised upon him. From the facts which he adduces Dr. Parona draws the following corollaries:—1. That the method in question is now proved to be sufficiently innocuous. 2. That in the majority of cases there is obtained by the injection of hydrate of chloral a firm and perfect closure of the varix, with insignificant reaction. 3. That, failing the formation of a coagulum, the operation may be repeated in a few days without any inconvenience. 4. That such accidents as phlebitis, suppuration, ulceration, and evacuation of the clot are very rare. 5. That mortification of the skin at the site of the puncture is an uncommon occurrence, and depends upon unskillfulness or carelessness in operating. 6. That the operation is but very slightly painful; and that the wounds usually following obliteration of the veins cicatrise very rapidly.—*Ann. Univ. di Med. e Chir.*, Giugno.

[The solution of chloral used was, it is stated, that recommended by Porta, the strength of which, however, is not mentioned. Generally from three to five injections were made at a time. In one case one drachm of chloral altogether was used for four injections.—G. F. D.]

THE ELASTIC LIGATURE IN SPINA-BIFIDA.

AT a recent meeting of the Société de Chirurgie, reported in the *Bull. Gén. de Thérap.*, No. 10, 1875, the reading of a case of spina-bifida occurring in a child three years old, operated on by elastic ligature and cured, became the subject of some discussion. Another case was cited in which the operation was followed by convulsions and the ligature had to be withdrawn.

M. Blot, who spoke on the subject, said that he had not entire confidence in the procedure. Nervous filaments, he remarked, were often present in these tumours, and even expansion of the cord; it is not therefore always prudent to interfere. Besides, he had found that these tumours decrease in time, and often disappear entirely at last. In the course of the discussion on the indications for operation, M. Despres said that when the tumour is not reducible, an operation may be performed without inconvenience. When, however, there is a large communication between the tumour and the spinal envelopes, it is necessary to abstain from all intervention.—*Philadelphia Medical Times*.

GURGUN-OIL IN THE TREATMENT OF SKIN DISEASES.

ASSISTANT APOTHECARY G. W. PHILLIPS, in Medical charge, Nicobars, has found gurgun-oil, used as for leprosy, to be very efficacious in the treatment of lupus, psoriasis, and scabies. Experience in the Madras leper hospital has, it appears, confirmed the conclusions arrived at in the Andaman Islands, namely, that, *when used thoroughly and perseveringly*, according to Dr. Dougall's method, gurgun-oil possesses the power of producing an immense improvement in cases of leprosy of every kind.—*Indian Medical Gazette*.

PHYSIOLOGICAL ACTION OF NITRITE OF AMYL.

SPEAKING at a recent meeting of the Société de Biologie (*Gaz. Méd. de Paris*, 3 Juillet), M. Rabuteau remarked that the nitrite of amyl and other nitrites are hæmatic poisons, which alter the globules, and, indubitably, the plasma, since albuminuria may be observed under their influence. It is probable that the albumen proceeds from the globuline which is found along with the hæmoglobine in the red globules. The nitrites are insidious poisons, like phosphorus and colchicum, since they do not always act rapidly, but often not until after the expiration of some hours. According to toxicological observations, nitrous fumes act also in a similar manner. Workmen who have succumbed under the influence of nitrous vapours—as, for example, those who remain too long in the leaden chambers in which sulphuric acid is made—have not died immediately, but some hours after the first appearance of poisoning, when their state, at first sight, did not appear at all alarming. According

to these data, it would seem that the nitrite of amyl ought not to have a place in the therapeutics of nervous affections. In reality, it does not act specially upon the nervous system, but upon the blood, modifying the hæmoglobin, and changing it into acid hæmatin.

In a paper on the general treatment of chronic nervous diseases, quoted by *The Practitioner*, July, 1875, Professor Benedikt, says that amyl nitrite may best be applied as an odorous drug, mingled with double its weight of oleum fœniculi. He recommends it in asthmatic and steno-cardiac cases, in epileptic faintness, accompanied by pallor, and in migraine also, when they commence with paleness of the face.

DIABETES MELLITUS IN A GIRL AGED SEVEN YEARS.

DR. JENSEN, of Helsingör, reports this interesting case (*Ugeskrift for Læger*, 3rd series, Vol. xviii., p. 297). The patient had a healthy family history; it is to be remarked, however, that her father was greatly addicted to drinking at the time conception took place. Three of her brothers and sisters died—one shortly after birth of convulsions, a second when a few weeks old with dropsical symptoms. The disease developed quickly, for, from having been previously healthy and active, she pined away, became thin, suffered from thirst and frequent micturition. On an examination being made soon afterwards, the urine was found to have a spec. grav. 1036, to be free from albumen, but to contain 8 per cent. of sugar. She was put on Bouchardat's diet, but under it the debility and headache increased, so that she had to be allowed to use a little rye-bread along with it. She then perceptibly improved, the urine diminished in quantity, but the amount of sugar kept up to 6 or 7 per cent. She ultimately felt so much better that her parents omitted to make her adhere to the restricted diet. The symptoms now developed afresh and with great rapidity, and she died after an illness of about five months' duration in all.—*Nordiskt Med. Arkiv*. Vol. VI. Part 2. 1875.

J. W. M.

A THEORY CONCERNING SLEEP.

OUR existing knowledge about the physiology of sleep does not go much beyond the fact that the phenomenon in question is invariably associated with a comparatively bloodless condition of the brain. Pflüger attempts to take us a step farther by constructing an elaborate hypothesis of a physico-chemical order (*Pflüger's Archiv.*, x., 8, 9). Starting from the view that the functional activity of any organ, and more especially of a nerve-centre, depends upon a dissociation of living matter, which is itself only a modified form of albumen, the author goes on to speculate that the chemical potential energy which is used up in the formation of every molecule of carbonic acid is transformed into heat.

In other words, the atoms of which this molecule consists are thrown into a state of very active vibration. These intramolecular explosions are propagated in all directions along the nerves to the muscular and glandular systems, which are in structural continuity with the nerve-centres. Frogs, deprived of oxygen, are thrown into a state of apparent death, precisely similar to sleep; from this they may be roused by a fresh supply of oxygenated blood. A certain proportion of intramolecular oxygen in the nerve-centres is thus essential to the waking state, since it enables a given number of explosions to occur in a unit of time at a given temperature. But, during the waking state, the energy of chemical affinity is used up much faster than the intramolecular oxygen of the grey matter of the brain can be replaced; consequently the formation of carbonic acid steadily diminishes; and when the number of explosions per unit of time sinks below a certain minimum, sleep ensues. The entire energy of the brain is never really used up; but it sinks to a point at which, in the absence of all external stimuli, it is incapable of maintaining functional activity. This theory may be so developed as to explain most of the phenomena of ordinary sleep, such as its periodicity, &c.

QUININE AS A GARGLE IN SORE THROAT.

To *The Practitioner* for August, 1875, Dr. D. J. Brakenridge contributes a short paper on the use of quinine as a gargle in diphtheritic, scarlatinal, and other forms of sore throat.

The following facts, among others, may now be regarded as established:—

1. Quinine is a protoplasm poison, and limits the number and movements of the white blood corpuscles and pus cells.
2. It prevents the pathological migration of the blood corpuscles into the tissues of the membranous and parenchymatous organs exposed to the air, both when it is given subcutaneously and when it is directly applied to the part.
3. It restrains the dilatation of the blood-vessels.
4. It is an antiseptic, and exerts a paralyzing, or, in larger doses, a destructive influence on microzymes.

With these facts in view, the theoretical appropriateness of quinine as a gargle in diphtheria with abundant proliferation of micrococci, and in scarlatinal, and various other forms of sore-throat, especially when attended with membranous exudation, pultaceous secretion, or ulceration, is apparent. For it antagonises all the visible factors of such forms of inflammation.

Dr. Brakenridge has employed in many cases a gargle composed, as a rule, of 2 grains of sulphate of quinine and 5 minims of dilute sulphuric acid to each ounce of water. He draws the following conclusions:—

"Simple non-syphilitic ulcers of the throat, under this treatment, at once assume a healthier aspect and heal rapidly.

"In syphilitic ulcers, the local treatment has always been accompanied by the internal administration of iodide of potassium, or some other suitable constitutional remedy; but my impression is that, in these cases, the cure is hastened by the quinine gargle.

"Its effect in the sore throat of scarlatina is very marked, the pultaceous secretion being checked, and the inflammatory swelling diminished.

"It is of comparatively little use in the early stage of cynanche tonsillaris, over which tincture of aconite, in minim doses frequently repeated, has so decided a control. When, however, abscess followed by abundant discharge of pus results, its beneficial influence in checking the suppuration and promoting healing is marked.

"In the slighter forms of diphtheritic sore-throat it answers admirably, preventing the extension of the disease, and promoting the separation of the membranous exudation.

"It is, however, in severe cases of true diphtheria that I hope it will prove most useful. I have now employed it in three cases of this disease, and in all the result has been highly satisfactory."

J. W. M.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. IX.—*Three Cases of Popliteal Aneurism (two of the Patients having been previously surgically treated for pre-existent Aneurism of the fellow-limb); Amputation in one case followed by recovery; the other cases cured respectively by Compression and Deligation of the Femoral Artery.* By MR. EDWARD STAMER O'GRADY, Ch.M., M.B., A.B., Univ. Dub.; Surgeon to Mercer's Hospital; Fellow and Member of the Surgical Court of Examiners, R.C.S.; Licentiate of King and Queen's College of Physicians; formerly Lecturer on Surgical Anatomy at the Carmichael School of Medicine, &c., &c.

CASE I.—*Popliteal Aneurism; prolonged Digital and Instrumental Pressure unsuccessful; Amputation of the thigh; Recovery.*

X. X. (No. 880), aged twenty-eight, a man of unusual intelligence, who, in early life, had been a wild, dare-devil kind of fellow, and of late had followed the occupation of a clerk, was admitted to hospital June 2nd, 1871. He had always considered himself to be a hardy, healthy man, though, according to his statement, there was a history of previous syphilis, contracted whilst serving in the Fourth Dragoons. About nine weeks ago he first felt pain in the right knee, and coincidently observed that there was a pulsating swelling behind the joint. This pain commenced quite suddenly, and, so far as the patient knows, did not follow

any sprain or injury. It soon became the source of constant and terrible suffering. Relief was sought at the Limerick work-house, where Dr. T. R. Phayre, then the able resident officer of that institution, applied instrumental pressure along the artery. This treatment was followed by so much benefit that after fourteen days the patient took his discharge and went "on a spree" of some days' duration, at the end of which he found his limb worse than ever. X. X. now determined to come to Dublin. He complained bitterly of persistent numbness of the foot, associated with constant pain over the region of the inner ankle. Spasms and cramps in the calf of the leg were of frequent occurrence. The knee was slightly flexed. Any attempt to alter its position in the least degree caused much suffering. In the popliteal space was a tumour, fully equal to an orange in size. [The measurements of the right knee, on a level with the centre of the patella, were $15\frac{1}{2}$ inches, of the left $14\frac{1}{2}$.] It pulsed strongly both behind and laterally, the wave of blood feeling as if immediately beneath the skin. The sac collapsed considerably when firm pressure was made on the femoral artery. Some œdema of foot and leg was also present. There was considerable cardiac irritability; but no marked lesion of that organ or of the larger vessels, though, in the opinion of some of those who saw the case, there was a more or less general tendency to atheromatous degeneration. The remaining viscera seemed quite healthy.

The morning after admission to hospital the limb was uniformly supported by tails, made of a smooth, soft fabric, and laid in a soft gutter of pillows. A Read's lever-compressor being adjusted in position, its pad was easily made to command the artery in the groin, whilst a hoop tourniquet enabled the vessel to be compressed lower down. On this and the following day pressure was commenced at 10 a.m. and maintained uninterruptedly until 10 p.m. The instruments were tended to with the most sedulous attention, each being alternately brought into play before the action of its fellow was suspended, and were worked so as to entirely arrest the current of blood in the artery. Along the line of instrumental pressure the integument was occasionally washed with camph. spts. of wine, and perfectly fresh folds of the softest chamois kept between it and the pads of the compressors. There was thus very little cutaneous irritation set up. On both days, whilst the instruments were in use, the pain and spasms in the calf of the leg became intensely aggravated, the suffering at times being such that the patient was almost delirious. The local use of aconite and the free

administration of opium and chloral failed to afford substantial relief. At the end of the second day's compression no change of any kind could be observed in the limb. Each night relief was obtained with the removal of the instruments, and a fair amount of sleep subsequently obtained.

On the morning of the 5th, through the kind aid of several of the senior students,* who, according to a previously regulated roster, relieved each other in pairs every two hours, digital pressure was commenced at ten o'clock, and uninterruptedly persevered with for thirty-six consecutive hours. During the entire of this period I believe that every precaution was taken by the gentlemen named, as each relieved the other, to insure that the pressure on the artery remained continuous. The same violent paroxysms of pain and spasm that characterised the previous two days continued to recur. It was only by the occasional exhibition of stimulants, to give him heart, as he said, that the patient could be coaxed into permitting a continuance of the treatment. At 10 a.m. on the 6th the pressure was suspended, to allow of an undisturbed night's rest. On examination the tumour was found still to pulsate strongly—though it seemed as if the arterial wave was further from the finger, and that the sac did not collapse so much on stopping the blood-current above. Two grains of opium were given in pill, and were followed by a fairly quiet night.

On the 7th the same instrumental appliances as first used were again had recourse to, and the patient, who understood their manipulation well, and was able to manage them with accuracy, was directed to apply the pressure as agreeable to his feelings. He "kept it on"^b with much adroitness for several hours at different periods during the day, but towards night had a paroxysm of the cramps and spasms, on this occasion so severe that he removed the instruments, and resolutely refused to allow any further pressure. Persisting in this determination next day, it was decided, on consultation, to try forced flexure of the limb; accordingly the leg, having been

* Messrs. Lockwood (since unfortunately a victim to dysentery in India), Hamilton, *Morgan, *Furnell, *Drew, *Hanlon, *Porter, *Dixon, *W. Morgan, *Tighe, Carpenter, Flood, Panter, Ffrench, Lampey, Murray, Young, Wilkinson, Mason, Raverty, Collier, Eaton, Keelan, and Lyster. Those gentlemen whose names are prefixed with an asterisk each took a second and, in four cases, a third turn at the work.

^b Whilst pressure was "on" the effect was constantly checked by an experienced pupil, who, however, seldom found it necessary to touch the instruments; indeed, as a rule, X. X. applied them far more effectually than any of us could.

evenly bandaged as far as the knee, was slowly flexed on the thigh, the movement being gradually continued till the heel was within a few inches of the back of the thigh. No pad was placed in the popliteal space on account of the great sensitiveness that existed to pressure or manipulation of any kind there. A suitably applied bandage secured the limb in the position indicated; this was maintained for twelve hours, during which there were several paroxysms of suffering and pain, similar in character to those of the preceding days, and necessitating the free use of opium—altogether 7 grains of the powdered drug and 90 drops of the tincture were used during the day. Sleep immediately supervened on the limb being let down (no change could be detected in the condition of the aneurism) and continued uninterrupted for the entire night, the patient awakening late on the morning of the 9th free from pain; he was now in better humour, and allowed the instruments to be readjusted. During the day he controlled them with his habitual dexterity, and effectually checked the stream of blood. He suffered but little this day from pain, and required no opiates. When pressure was, at 10 o'clock, left off for the night, it was evident that a considerable amount of consolidation had taken place in the aneurism. Encouraged by this success, the pressure treatment was sedulously carried out for the ensuing nine days, from 8 a.m. till 10 p.m.—i.e., for 14 hours daily. As formerly, the two instruments were used and kept in alternate action. Each night on their removal an opium pill was given, and two or three grains of the drug usually secured a fair night's rest. The aneurism now seemed to have become partially filled with solid blood, but, *pari passu* with increasing firmness, it had also expanded laterally, and so increased somewhat in size.

On the 19th the upper instrument having got deranged, digital pressure was again adopted for 12 hours.* The next day the pressure, both digital and instrumental, had unavoidably to be omitted.

21st.—A smart rigor took place early in the morning; this was followed by much reaction for the ensuing three days. X. X. continued feverish and sick; there was loss of appetite, accelerated pulse, dry and glazed tongue; bitter complaint was made of burning pain along the front of the tibia of the diseased limb, and extending to the inner side of the ankle. This pain was incessant,

* Messrs. Lockwood, Hudson, Drew, J. Morgan, W. Morgan, M'Grane, Carpenter, Eaton, Young, White, and Philips, kindly acted on this occasion, and carrying out details as on the first time.

though varying somewhat in intensity from hour to hour, and remained almost, if not entirely, unrelieved by opiates given internally, or by the use of various local applications. Ice placed for a few minutes on the seat of its greatest intensity seemed to assuage its violence more than anything else. A quinine and muriate tincture of iron mixture was also given, and, it was thought, with some benefit. During the next ensuing days occasional and severe rigors occurred, the pain remaining constant until the night of the 23rd, when, without any obvious cause, the patient, who during the day had taken 10 grains of powdered opium—his general condition also necessitating the free use of stimulants—suddenly got relief, and slept well for the remainder of the night.

24th.—It was found that during the night the region of the knee had become considerably enlarged; the aneurismal sac, also, which late the night before pulsated distinctly, had now almost entirely ceased to do so; it was observed, too, that the inner side of the leg and foot felt to the hand much colder than the outer. In the evening the paroxysmal pains returned again, and lasted some hours.

On the 25th X. X. again resolved to abandon the pressure treatment. The ferruginous bottle previously quoted was directed to be discontinued, and instead thereof a pill composed of 2 grains of quinine and 1 of pulv. opii made up with ext. hyoscyamus, to be given every third hour, as also an ounce of brandy.

26th.—Since the suspension on yesterday of the pressure the aneurismal tumour had perceptibly increased, the circumference of the joint on measurement being now $16\frac{3}{4}$ inches. Pulsation, too, had largely returned, and increasing œdema of the leg was present. The temperature on both sides of the leg became equalised, and the same as that of the fellow limb (97°). For several succeeding days no local treatment whatever of the limb was permitted.

X. X. usually lay in part turned over to the right side, with the leg flexed on the thigh and resting, too, on the right or outer side. The pills were taken regularly and more frequently than originally prescribed—usually every second hour.

In a week the tumour had consolidated so much that pulsation, either lateral or posterior, could scarcely be detected. Meanwhile the man's general condition was the reverse of satisfactory; there were oft-recurring and prolonged paroxysms of pain of the intensest character—these greatly interfered with his rest. The pulse, too, usually exceeded 120, and there was hurried breathing, with pain

on the right side of the chest; this was relieved by free and repeated dry cupping. Though, as a rule, he ate well and with a good appetite, yet he was visibly emaciating—with some difficulty he was induced to take cod-liver oil at night. Subcutaneous injection of morphia, which was thoroughly tried, gave but partial and uncertain relief at his periods of suffering.

Against the middle of July the tumour had again become very fluid, and pulsation therein correspondingly distinct; flesh was appreciably being lost, and the countenance wore an habitually anxious expression. The man's now debilitated state required the regular administration of stimulants, 6 to 10 ozs. of spirits or wine being given daily. Though considerable diminution had occurred in the *intensity* of his sufferings, yet a very unpleasant sensation of "pins and needles," almost constantly present in the patient's foot, incommoded him much, his annoyances being further increased by an irritable ulcer in the perinæum. This had formed after a scratch, and was now the seat of much pain. Ligature of the femoral artery was at this time recommended to, and the proposal willingly accepted by, the patient; but on the 16th, the day fixed for the operation, he, at the last moment, summarily insisted on its postponement till, as he said, he tried the effect of "another shot at the pressure." This mode of treatment was at once resumed with the same care and precautions as when first adopted.

On the early morning of the 18th, before the pressure for the day was commenced, it was observed that the external side of the foot was markedly cedematous; the integument over the outer malleolus being quite dark, as if a bed-sore was about to form there; the temperature between the toes was under 90° * (in the same locality the thermometer usually stood at 97.5° , which was the last noted register on the 16th); in the ham the instrument stood at 95° , and under the tongue 98.2° . Pulse, 130, jerky. The spot on the ankle was painted with a 60-grain solution of nitrate of silver, and protected by a suitably shaped piece of soft leather spread thickly with soap plaster.

August 23rd.—Some local improvement had been gained. Unfortunately, just at this juncture, X. X. heard accidentally of the death of a favourite sister (a circumstance that, in consideration of his own state, had, for some time, been successfully kept concealed from him); he at once became greatly depressed, said he did not now

* The thermometer was not marked for any lower degrees.

care what happened to him, removed the instruments, and would not permit their use any further.

On the 9th August it was observed that the posterior tibial artery could not be felt beating. The aneurism still pulsated as at the time of the last report; the œdema of the foot had decidedly lessened under gentle support by bandages and elevation on pillows. The threatened mischief on the external malleolus had progressed no further, but the ulcer in the perinæum had continued to be a source of much annoyance; it had remained irritable, painful, and indisposed to heal under frequently varied applications. That which soothed it most was a strong solution of watery extract of opium in black wash.

It was not until the 12th that he could be persuaded to allow the resumption of pressure—in detail, it was carried out as before. During the twenty days of total abstinence from it he had improved in appearance, and his face had, to a large extent, lost the anxious expression it had long borne. Some improvement was manifest now too in the perineal trouble, the ulcer looked far less angry, and had begun to cicatrise at its edges; altogether the patient looked, and he said he felt, stronger and better. Advantage had been taken of his improving condition to reduce to 4 ozs. the allowance of stimulants that for so long a time had been imperatively required. At the suggestion of a colleague, the aneurismal tumour, now again pulsating freely, was kept frequently painted with a saturated solution of iodide of potash in water. In a week there was recurrent and increasing œdema of the foot, the amount of this was now but little influenced by bandaging or elevation of the limb.

Again, with the resumed compression of the vessel, the aneurismal tumour began once more to grow firm; day by day the pulsation therein became feebler; against the 27th it seemed to have become quite solid. Simultaneously with this change the leg had gradually flexed itself more and more on the thigh till the angle of flexure nearly equalled a right angle. To rectify this, a well-padded iron splint (furnished with a rack and pinion movement at the part corresponding to the articulation), brought to a suitable angle, was applied to the flexed limb, without force or strain, and then carefully secured to it by bandages; morning and evening, on each occasion, by an almost imperceptible amount, the splint was extended by the key, and thus the limb painlessly brought down; so slowly and cautiously was this done that against the 25th of

September the daily movements had not yet brought it down quite straight. Occasionally during this interval it had been necessary to readjust the padding of the splint, which was then immediately reapplied to the limb; it was now seen that, since the last such rearrangement, there had occurred a vast lateral expansion of the aneurism—the circumference of the diseased limb, through the centre of the patella, was now increased to $17\frac{1}{2}$ as against $14\frac{1}{2}$ inches on the sound side. On the lateral aspects the aneurism felt hard and firm, whilst it was soft and nodulated posteriorly; the integuments covering it were of a dark red, lurid hue, giving to the ham an ugly and threatening look. There had been now, for some time, complete absence of local pain, and the general health had held up fairly. Throughout the tedious and prolonged treatment that has been sketched, unwearied attention had all along been paid to hygienic matters, the patient being sometimes shifted from one ward to another, and an occasional warm bath given; this latter was a source of much comfort. The limb was now placed on a well-padded gutter splint with notches at the situation of the aneurismal expansions, and the use of the two compressors persevered in; but, in spite of the most sedulous care in their management, it was only too evident, on each successive day, that the aneurismal dilation continued to increase, especially the “knob,” behind, which became softer and more prominent. The patient now, at last, came to realise his precarious state, and, some days later on, urgently sought that relief from operation he had hitherto declined.

October 10th.—In view of, if possible, getting a chance to save the limb by securing the vessel above and below the aneurismal dilatation, after the patient was placed under chloroform, and whilst steady pressure was kept on the femoral at the groin, the tumour was laid freely open on its posterior aspect, and a bowlful of black-currant-jam-like coagulum (the softer central portion being invested with an involucre of laminated fibrine, very thick and firm laterally, nearly absent behind, ill-marked and soft on the articular aspect) turned out by the hand. On passing the fingers far into the emptied sac, the artery proved to be dilated and diseased up into the femoral; its condition afforded no choice but to amputate the thigh; this was done by a long anterior and short posterior rectangular flap, analogous to the mode of Mr. Teale; curtains of periosteum of a size amply sufficient to cover the divided end of the bone were also reflected, by means of a Langenbeck's raspatory,

from its anterior and posterior surfaces before it was cut.* Mr. Ledwich commanded the artery with the best effect, unusually little blood being lost; six large vessels were secured by silk ligatures;^b these were brought through the inner angle of the wound. Five hours after the amputation the cut surfaces were well "glazed," and the edges of the stump were brought loosely together by a few points of carbolised catgut suture. Prompt reaction followed the operation, and the progress of the stump to recovery was satisfactory. On the 23rd the ligature on the femoral came away, followed by two of the others on the 24th and 26th. One ligature held fast till November 16th, the stump being then several days healed, except for its track. On the 29th of that month the patient left hospital, being now strong and healthy, unless for a slight ulceration behind the left ear, and a patch of dark copper-coloured eruption about the size of half a crown over the right hip; both these troubles were looked on as being syphilitic; the perineal ulcer remained well and soundly healed.

It may be summarised here that—independent of the pressure practised at Limerick Workhouse, under Dr. Phayre's able direction and superintendence, and which seemed likely enough, were it not for the patient's own indiscretion, to have eventuated successfully—the carefully kept "notes" of the case, whilst he was in Mercer's Hospital, show that the combined different periods during which instrumental pressure was practised there, came to a gross total of 720 hours; to these must be added the two epochs of digital pressure, together amounting to 48 hours. It is important to state that the pressure was almost always such as completely to check the circulation; on various occasions it was attempted to gauge the degree of compression and allow a slender stream of

* In all major amputations, except, of course, disarticulations through joints, it has invariably been the writer's custom to adopt this mode. The very numerous instances in which he has now practised it warrant him in speaking with confidence and authority as to the good effects of doing so, both as regards the diminution of the dangers of the operation in consequence of the early adhesion of the periosteal flaps, and also as to the ulterior serviceability of stumps so formed. The few minutes consumed by the division and separation of the periosteum are, indeed, well spent.

^b Probably had carbolised catgut ligatures been used for securing the vessels, the healing of the stump would have been accomplished considerably sooner than it occurred. At that time the writer had not the same confidence in this substance that subsequent larger experience has given him; more recently he has used it for securing vessels in all cases of amputation, even in those through the hip and shoulder joints, also for the deligation of vessels in continuity, the vessel being tied with a tightly-drawn reef knot, and the ends of the ligature cut off about half an inch from it.

blood to pass, but, on each such attempt, the pain complained of during the pressure was intense, insupportable, and relieved by further tightening the apparatus so as to completely stop the current. The manipulation of the instruments, and shifting duty from one to the other, was, after the first few days, attended to, and most adroitly too by the patient himself, though all through the treatment, as a precautionary measure, it was never omitted to constantly superintend the play of the instruments.

CASE II.—Femoro-popliteal Aneurism occurring in an individual whose opposite thigh had been already amputated for aneurismal disease; treatment by Pressure, and Recovery.

M. M. (No. 928), aged thirty-seven, a pensioner, lately discharged from the "Scots Greys," was admitted September 2nd, 1871. He stated that he had always been a sober man, and free from any illness or delicacy unless a cataract, which was patent in the left eye. Though such was not acknowledged in so many words, yet, from his mode of answering, there seemed fair grounds to conclude that in early life he had syphilis. About thirteen months previously, whilst still in the service, the left lower extremity was amputated through the thigh for aneurismal disease. A good stump resulted. Neither the former nor the existing aneurism can be traced to injury. The existing affection was first observed by accident some six months ago, and has since been gradually increasing in size, and "throbbing" more violently—the growth, however, being quite unattended with pain. Notwithstanding the bitter experience he had already had of the formidable nature of the malady, M. M. looked on his present trouble merely as a "varicose vein," and in this belief presented himself for treatment in the practice of my friend, Dr. Albert O. Speedy, to whose kindness I am indebted for the opportunity of observing this case of unusual interest and importance. On examining M. M., a swelling of large size and flattened outline was seen occupying the right ham and inside of lower part of the thigh. It pulsated visibly and strongly throughout, giving to the hand the impression that but the most attenuated and thinnest of membranes intervened between it and the heaving fluid within; it seemed as if very slight provocation—indeed, a false step, an accidental stroke, or even ordinary manipulation—would determine immediate rupture. Careful examination showed that the cardiac action was feeble, but gave no indication either of disease in that region or of further arterial

mischief. The pulse beat 90 at the wrist; the impulse was feeble.

Treatment by pressure was begun without delay, "Skey's" tourniquet being applied as near to the groin as possible, and a common screw clamp lower down. The use of these instruments was directed to be conducted with attention to similar details of management as observed in the foregoing case, which it will be seen from the dates was simultaneously under treatment. In this case, likewise, a strictly recumbent posture was enjoined, and fairly observed by the patient, who, however, only for a day or two submitted to the desired dietary arrangements. Half a pint of porter had to be allowed at dinner, and two ounces of whiskey in punch at night. A pill, composed of $\frac{1}{2}$ grain acetate of lead, with 3 grains of gallic acid, and made up with extract of hyoscyamus, was prescribed to be taken three times a day. Five grains of citrate of iron and quinine were also directed to be taken an hour before each meal, the patient being anæmic and complaining of loss of appetite.

3rd.—A good night's sleep was obtained after a single grain of opium given at 9 o'clock, when the pressure was suspended for the night. Each succeeding day the instruments were kept on from 7 a.m. till 9 p.m. M. M. managed them then in the most perfect manner, and, alternating the instruments, controlled the circulation effectually. The report of the 7th shows that, notwithstanding the same care adopted (by laving the parts occasionally with camphorated spirits of wine, and using perfectly fresh pads of the softest chamois between the instrument and the skin), in this case, as in that of X. X., the integument under the lower instrument (the clamp) had blistered. This apparatus was therefore removed, and a Milliken spring compressor having been procured, was fitted to the groin instead; thus, it and the "Skey's" tourniquet were nearly in contact. Two days later (9th), in consequence of evidences of cardiac irritability, $\frac{1}{2}$ of a grain of extract of belladonna was directed to be added to each pill. As already stated, the case was regarded as one of the utmost gravity, and in which prompt surgical interference might at any moment be called for; the patient was therefore habitually seen by me at very short intervals. When visited, between 5 and 6 p.m. on the day in question, there was no apparent change whatever in the tumour; no appreciable deposit of fibrine or coagulation within it—if possible even less intervening structure seemed to separate the blood-torrent from the examining hand.

On the occasion of my next visit, at 11 p.m., two hours after the pressure for the day had been ceased, the tumour was found to have become quite solid; not a vestige of pulsation could be felt. The integument on the surface of the swelling, which hitherto had in no respect differed in appearance from that on the rest of the limb, was now quite red, and very tender to the touch throughout. The foot, for the first time, was now slightly œdematous, and, in describing his own sensations, M. M. said he had no absolute pain, but felt as if the blood were trying to force its way through the aneurism. A good night's sleep followed the administration of a couple of grains of powdered opium in pill. On the next morning the aneurism felt quite solid and hard—so tense, in fact, that it resembled to the touch an India-rubber football; the foot was rather more œdematous too. Expression of face very anxious. Pulse remarkably hard, but retaining its almost constant value of 90. An opium pill was directed to be given every fourth hour—pressure to be discontinued.

12th.—Limb uniformly bandaged, a soft pad being superposed over the artery. This dressing was not disturbed for four days. At the expiration of this time the only change observable was that the tumour was somewhat softer, though still solid. The countenance had, in great degree, lost the anxious expression noted on it for some time past. The bandage was directed to be kept constantly applied, unless whilst the integument covering the aneurism was being painted with a saturated solution of iodide of potash, which for a time was applied twice a day. Limb kept securely at rest on a well-padded gutter splint accurately adapted to it. Early in October the patient was allowed to get up and move about. The contents of the occluded aneurism were steadily absorbed, and on the 19th of the same month M. M. was allowed home, now quite well, and with but little remnant of his late trouble.

The gross aggregate of the pressure in this case was 106 hours. The consolidation of the aneurism was quite sudden, occurring in a space of time certainly less than five hours. Like as in the preceding case, the instruments were in the main managed by the patient—subject, however, to the almost constant surveillance of either the resident gentlemen at the hospital or myself.

CASE III.—*Popliteal Aneurism on the Right Side, occurring Seventeen Years subsequent to Gunshot Injury of the Thigh in an individual who, a year previously, had also been cured by Pressure of Popliteal Aneurism on the Left Side; Ligature of the Right Femoral Artery, followed by Recovery.*

J. M. (No. 1,116), a tall and fairly-strong muscular man, about forty years of age, was admitted February 6, 1872. He had been a marine artilleryman, and had been wounded seventeen years previously by a "wrought" bullet in the right thigh, the locality of the wound being now indicated by two depressed cicatrices, situated below the centre of the thigh, respectively placed on its antero-internal and posterior aspects. The anterior scar was, the patient said, on the site of the orifice of entrance of the missile. A line connecting the two scars would seem to implicate the course of the great vessels, but at the time of the accident, J. M. states, the surgeon in charge of him did not regard the vascular packet as having been damaged. There is a previous history of syphilis, of which no distinctive traces now remain. In the commencement of 1871, J. M. was an inmate of a London hospital; he then suffered from trouble in both hams. On the left side was what appears from the history to have been a well-defined popliteal aneurism; this was cured by pressure in five weeks. On the right side some complications existed, and, according to the patient's account, there was coincident mischief in the knee likewise. The pressure treatment on this side utterly failed. Some weal-like indurations now remain along the track of application of the instrument (from description apparently a "Carte"). Since leaving hospital on that occasion his right limb has been a constant source of suffering. On moderate exercise it would swell and become oedematous up to the knee. An extensive interlacement of enlarged and varicose veins, which covered the surface of the leg from that joint downwards, was also wont to become very painful. Some few days prior to his admission to Mercer's, J. M. had slipped on a staircase, and hurt his right knee, which had become swollen and painful. In the ham was an elongated swelling, pulsating violently; this gave the feel of being deeply placed and covered with much dense, firm tissue. In addition to the conditions already mentioned, it was at once obvious that the right knee-joint was considerably larger than its fellow; on measurement it was found to be an inch in excess, and, in consequence of pain on attempting to do so, the

articulation could not be flexed. The increased size of the parts was entirely consequent on the effusion into the joint, as in the aneurism there was but little lateral dilatation. The result of frequent thermometric observations showed that the left leg was usually 2.8° F. lower in temperature from the knee down than the corresponding points on the right side. The instrument registered 91° and 93.8° between the toes at times when the patient was warm in bed; it gave the same readings in the hams, and under the tongue indicated 98.3° . On the left side neither anterior nor posterior tibial arteries could be felt, nor pulsation or any remains of the aneurism found in the popliteal space. Two arteries of considerable size could be detected pulsating beneath the patella—one on either side of it. Except for the indurations above mentioned, as situated on the course of the main trunk, both thighs presented to the eye the same appearance; but whilst on the left side the femoral artery could be traced for some distance normally down the thigh, on the right the vessel immediately after crossing the bony pubis, where alone its pulsations were perceptible, seemed to dip deep into the structures of the thigh, its whereabouts being no longer recognisable by the finger, though firm pressure in the direction of the normal course of the vessel arrested the pulsation in the hams. In the inguinal and iliac regions on this side there was a general diffused puffiness (the remains doubtless of the severe inflammatory action that, subsequent to the wound, had extended upwards, but no definite morbid condition could be made out. The heart's action, though weak, was otherwise healthy. The pulse ranged usually at 86, and, except for a generally anæmic appearance, the patient seemed to be a fairly healthy man; he was, he said, occasionally intemperate.

J. M. remained in Mercer's Hospital till June 6th, when he went back to England. Unfortunately the notes daily taken of his case during his first sojourn at the hospital were lost, and details of treatment cannot be quoted with absolute certainty. As in the preceding cases, the endeavour to associate absolute repose with a strictly-regulated diet was "kicked against." During the early part of his stay iron and digitalis were given with benefit; subsequently liquid extract of bark was prescribed. Pressure on the femoral artery was tried, both digitally and with various forms of instrumental appliances, but it was found impossible to keep the blood-current stopped any length of time continuously. On the whole, Mr. Skey's tourniquet was found to give the best results; it

was managed with much skill by the patient, but, as stated, the artery habitually baulked every attempt at continued compression. Towards the middle of May some improvement had taken place, and, yielding to the exigencies of the case, the patient was allowed to walk about on crutches, the foot being supported in a sling.

July 29th.—J. M. again sought admission to Mercer's Hospital. He stated that he had been as far as Liverpool, had used his leg very freely, and tried to "walk-off" his affection. This line of conduct had the effect of greatly aggravating his sufferings, and, not getting any relief in Liverpool, he came back to Dublin. There was now present a state of more or less constant pain in the limb, and his temper, too, had become very irritable; he would neither submit to pressure nor rest quiet in bed. Under these circumstances it was determined to cut down along the line, where pressure was known to arrest the beating in the aneurism, in view of finding and securing the vessel that fed it.

August 10th.—With some difficulty chloroform anæsthesia was obtained; then the limb being partially everted (it could at that time be scarcely at all flexed), an incision about four inches long, beginning about two and a-half inches below Poupart's ligament, was made in a line corresponding as nearly as possible to that of the normal course of the femoral; whilst dividing the subcutaneous fat, which was thick, three small vessels were "started;" one of these was secured by torsion, and the others tied. At the inferior extremity of the incision the fibres of the sartorius were in view; a layer of strong fibrous tissue was now cut through on a director, and then some muscular and tendinous bands, which done—at the bottom of the wound, now a full finger-length in depth, and in shape closely resembling a funnel-like pit—there lay exposed a thick cord; no pulsation in this could be felt, and it was intimately adherent to the surrounding tissues; two nerves, one a mere thread, the other of considerable size, crossed the surface. To gain the necessary room for manipulation, the cut was prolonged upwards another inch; a small portion of the thick and dense fibrous capsule and well to its outer side was then picked up on a toothed forceps and nicked by the knife; the tissue was then divided on a director, when the artery could be seen and felt pulsating freely; it was about the size of an ordinary black-lead pencil. An aneurism needle carrying a double fine silk ligature was without difficulty passed round the artery, from within outwards; as the artery was pressed on the instrument all pulsation stopped in the ham; the

bight of the silk having been secured, the needle was withdrawn, and the loop cut; then, by one of the fine silk threads (the other being a reserve to be used in the event of accident), a previously prepared, doubled and twisted, carbolised cat-gut ligature was drawn through, and the artery tied by a properly secured knot; both ends were cut off short, and the now unnecessary second silken thread withdrawn from under the artery. Though the ligature was very firmly tied, the artery presenting quite a puckered appearance, there was no sensation given as is usually felt on the parting of the inner arterial tissues. The vein was not seen at all. Two gut sutures and suitably applied adhesive straps sufficiently supported the parts. Ere the patient was removed from the table the foot and leg became very cold, as contrasted with the fellow limb. The extremity was wrapped in two or three plies of flannel roller as far as the knee, the thigh having a folded towel compress along each side of the wound, being surrounded with cotton wadding, and uniformly supported by tails. When placed in the ready-prepared heated bed both legs were somewhat elevated on pillows, with a hot jar at the feet. Forty drops tr. opii were given in a little brandy. Two and a-half hours after operation the foot had become warm; there was considerable local pain, for which another opiate was given. In the afternoon severe pain in the foot and leg, described as being of a bursting or rending character, occurred; this was very intense at 4 o'clock (five and a-half hours after ligature). The temperature of the limb, the hot jar having been removed an hour previously, was—foot 96°, knee 97°. These figures continued unchanged at night; occasional sickness of stomach occurred during the day. A grain of opium was given in pill at "bed-time," and followed by a good night's rest.

On the 12th the case was progressing most favourably, no complaint unless of soreness and pain in the region of the wound and over the pelvis of the same side, where some swelling and tenderness existed. The temperatures noted were between first and second toes, right side 96°, ditto left 93°; at knee, right, 97°, left 94.5°. A large poppy stupe was applied locally outside the dressing, and an iron and quinine mixture ordered. In consequence of the continuance of the local pain, which, however, did not prevent the patient eating a meat dinner, two opium pills were given during the day, without affording relief. In the evening, therefore, the tails were separated and the wound exposed; nothing could look better, but the upper end of the inner towel-pad had been rendered

quite hard by the drying of a little effused blood. The substitution of a soft fresh pad in its place, a strip of lint spread with creasote ointment being placed over the cut-parts, afforded prompt relief. Next day there was a faint erysipelatous hue over the lower regions of the pelvis and front of the thigh, and the wound seemed puffy. One of the retaining straps of plaster was divided to give vent to any fluid that might be pent up therein, but only a few drops of red glairy discharge escaped. The ungt. hydrarg. was freely smeared over the parts, which were then wrapped in a large poultice. The patient continued to feel well, with a pulse of 84, clean tongue, eating with his ordinary appetite, and but little febrile disturbance being present.

On the 14th suppuration began in the wound; the abdomen was now tympanitic, and some annoyance was caused by "windy retching." A rhubarb draught was prescribed, and, failing to act, was later on followed by a turpentine enema. This also did its work very imperfectly. However, on the next day (15th), after three doses of the "red mixture," the bowels responded freely. Matters now progressed favourably. There was occasional irritability of the stomach, but the wound healed kindly; the most approved dressing being lint wrung out of hot water and saturated along the line of the cut with tincture of opium.

On the 24th, a fortnight subsequent to the operation, the flannel bandage was opened for the first time, and the state of the popliteal space examined. In it was a firm mass the size of a walnut, in which there was no pulsatory movement whatsoever. The development of the collateral vessels could not be determined. Against the end of the month the wound had entirely healed, and on the 2nd of September the patient was allowed up. He now rose regularly every day, and, in a short time, began to go out, gradually increasing his distances of exercise, and, on the 5th of October, was discharged as well—the aneurism being in slow progress of absorption.

As part of the scheme of treatment in these cases, it was endeavoured to carry out the plan of a restricted and specified dietary scale, in association with undisturbed recumbency, that in this country finds much favour, as being conducive to the deposition of laminated fibrine. For each individual the items and times for his nourishment were carefully laid down, but as no one of the men could be induced to continue an approximation even to a fair

trial of this system, it would have been a useless consumption of both time and space to have entered into details on this matter.* X. X.'s condition in particular was such as to absolutely necessitate a liberal dietary, with, at times, even the free exhibition of alcoholic stimulants.

There were, more or less, strong grounds in all the cases for believing that each of the men had at some former period of their lives suffered from constitutional syphilis. During the prolonged treatment of these cases, not only had the patients the advantage of the experience and advice of my hospital colleagues, but others of the senior surgeons in the city were kind enough to see them likewise on various occasions.

It is but comparatively seldom that the surgeon has the opportunity of keeping in view the progress and *result* of his successful cases. When they have once passed from his immediate care he too often fails in his efforts at tracing the sequel of his patient's history.

With reference to the three cases here narrated, the writer deems himself specially fortunate in that circumstances enabled him occasionally to "keep an eye" on them. The sequel of the first case since leaving Mercer's can be briefly summarised. The patient, a man of restless and erratic disposition, spent much of his time perambulating the country; and on his pin leg, without other aid than his staff afforded him, he made long and frequent journeys on foot. Since the amputation he repeatedly travelled thus from Limerick to Dublin, and *vice versa*. Sometimes he worked in this city, during portions of the summer, as a bottler in a mineral-water manufactory. The winter he usually passed in the southern and western counties, where he was well known by many members of our craft. On one occasion he was under my treatment for some weeks in Mercer's for a bad attack of bronchitis, which nearly ended fatally, contracted whilst walking from Cork to Dublin during bad weather. On the morning of Sunday, July 18th, this year (1875), I met him accidentally in the street; he

* German to the question of the effect on the blood of very restricted consumption of fluids by the patient, allusion may here be briefly made to the case of a woman some sixty years of age, who was in the hospital a couple of years ago with a *non-traumatic palmar aneurism* on the right side. It resisted prolonged and varied treatment. The patient was attacked by an obstinate and profuse diarrhoea that lasted several days and enfeebled her greatly. Whilst thus bad the aneurism consolidated, and got perfectly well—at a time, too, when it was not the subject of any immediate treatment.

looked in prime health, and told me that he had never felt better in his life. He was then, he said, on the start for a day in the country. How or where he passed the day I could not learn, but at a late hour the same night he was brought into the hospital in a state of profound collapse, and expired, it was said, immediately. Unfortunately I had to leave town next morning, and did not return for some days. The efforts made to obtain a *post mortem* failed through the determined opposition of a relative. The amputation of the thigh had been survived nearly four years. It was at the time, and has continued to be, a matter of regret to me that X. X. prevented the femoral artery being tied on the day appointed for that operation. Had he allowed this to be proceeded with, in all probability he would have been saved from the loss of his limb.

Both the other men are still alive, in good health and younger looking than at the period when they were under treatment. Nothing could continue more satisfactorily than the progress of the second case since he left the hospital. It happened that on the occasion of my last seeing him, on the 3rd of the present month (September, 1875), Dr. J. Eaton, formerly a resident pupil at Mercer's Hospital, was with me, and joined in the very partial examination circumstances enabled to be made. M. M. stated that he felt himself to be in perfect health, and his appearance confirmed his statement; the limb was normal in appearance and feel; no trace of the old aneurism could be detected, and he said that he was quite free from any sort of annoyance or inconvenience in it. *More than four years had lapsed since the cure of the aneurism on the right side; more than five since the amputation for the same disease of the left thigh.*

Through the agency of a young lad, himself a patient at the hospital, the whereabouts of the third case, the subject of which was now residing at some little distance from the city, was also made out. Upwards of three years have passed since the ligature of the femoral. J. M. stated that he felt himself in good health. The varicose veins in the right leg have much improved (elastic stocking worn regularly), and are not at all as numerous or large as formerly. The knee-joint, too, has recovered, and considerable extent of flexion can be used without pain. No trace of aneurismal disease can now be detected in either extremity. On each limb anastomosing arteries can be felt beneath the patellæ, but neither of the anterior or posterior tibials can be felt pulsating. The heart's action is weak and feeble, though not so markedly as formerly, but no distinct disease can be localised. Perhaps, though it

is doubtful, some tendency to stiffness and rigidity can be detected, in the temporal arteries specially. A day or two before his coming to see me a slight accident had produced a minute abrasion, not so large as the nail of the little finger, on the front of the right shin. In consequence of the remaining varicose condition of the superficial veins, he was advised to come into the hospital. This he did, and the little ulcer healed soundly, though slowly.

The fact that the subsequent histories of the individuals whose cases have furnished the subject matter of this communication have been able to be kept in view, adds, in no small degree, to the clinical importance of same; specially as to the circumstances attendant on each. Two of the patients having been the victims of previous aneurismal affection, made the prognosis, whether immediate or remote, not by any means a hopeful one. The eminently satisfactory results obtained in all the cases have been, indeed, such as may fairly encourage the surgeon to hopeful perseverance in the treatment, by the various resources open to his art, of even the seemingly most unpromising cases of surgical aneurism.

ART. X.—*Treatment of Diseases of the Knee-joint.* By R. FITZMAURICE, L.K. & Q.C.P.I., L.R.C.S.I., &c.; Physician to County Kerry Fever Hospital.

THE following treatment of knee-joint affections I can, from a fair experience, recommend, and I believe that in many cases it will take the place of the time-honoured treatment of depletion and counter-irritation. The patient is put into the recumbent position, and a poultice of the symphytum (common comfrey) applied and left on, according to the severity of the case or the feelings of the patient, for twelve, twenty-four, or thirty-six hours, and if a cure is not effected in a week or ten days, a steel apparatus is fitted to the limb that takes the weight of the body off the knee, and allows the patient to move about on crutches, or take carriage exercise, as he will. This treatment to be supplemented by appropriate internal remedies, as the case may be—if scrofulous, cod-liver oil; if gouty, colchicum and alkalis. In all cases of joint diseases there is more or less of inflammation, and this is combated at present by the every-day practice of leeching, hot stuping, or cold applications, and different forms of counter-irritation, the result of which, in some cases, is to effect a cure, but often at the expense of the constitution, which suffers from prolonged confinement. In other

cases this end is not attained; and, in spite of all efforts, suppuration and ulceration set in, bringing sometimes a train of symptoms which call for prompt action in the way of operative measures. The treatment I advocate is not so likely to be followed by those serious results. The comfrey root is a powerful astringent, adheres closely to the skin, reduces any amount of swelling or inflammation in a few hours, and at the same time dries into a firm splint, that supports rather than weakens the joint, and dispenses with a formidable condition, inseparable from ordinary practice—namely, confinement to the house, which retards recovery and weakens the system. The method of application is as follows:—The root should be used fresh, washed in several waters till free of all earth and clean, and, while wet, scraped into a soft pulp, spread a little thicker than a crown piece on strong calico, and the whole joint encircled with it, and for three or four inches above and below it, and then bandaged with a soft elastic roller. If there are any hairs on the knee or thereabouts, they should be first shaved off, as in the process of drying they are pulled upon and cause pain. In some cases I lubricate the surface of the poultice with sweet oil to prevent its sticking too closely. If there is intense synovitis or osteitis, a fresh poultice should be put on every twelve hours till all pain and inflammation subside, and the last left on to form a splint, and then slit up as starch, and bandaged on the limb again. It may be also necessary, in severe cases, to give further support to the joint by confining the muscles with a starch bandage, put over the comfrey when dry, from the lower edge of the upper third of the thigh to the ankle. I have applied this remedy to other joints besides the knee, and with success. A little boy (whose mother died of consumption), after a strain showed signs of commencing hip disease, evidenced by lengthening of the limb, pain and stiffness in rotation, the line of the nates not well marked, and lameness. Several poultices of comfrey were applied, and the limb bandaged to a long straight splint, and the result was the removal of all those symptoms in about ten days, and the little patient is now well and running about.

A shopkeeper, aged thirty, consulted me some time since. He was suffering intense pain in the knee, which was swelled, and very tender to the touch, and veins ramifying on it. His pulse was quick, tongue white, thickened and hard swelling of the lower part of the femur, and two sinuses at each side of the joint discharging sanious matter; probing detected carious bone. The limb was semiflexed, and any attempt to straighten it caused great pain. He

got opium at night, and several poultices of comfrey, with traps to give exit to matter, were applied, and in about a week he was sent to the country, wearing a dried poultice and steel support. I advised him to drink milk freely, to be constantly in the open air, and to take cod-liver oil, and he soon returned to town so much improved that he was able to resume his business, and has continued to do so for the last two months.

A young man of a delicate family complained of pain of the knee and lameness. His pulse was quick, and countenance very pale. The head of the tibia was very tender, both at the outer and inner side of the joint, and decidedly enlarged. The same treatment was adopted in his case, and during the progress of cure, which lasted some months, he was able to continue his duties as clerk and to be moving about. If this patient were confined to the house under the ordinary treatment of counter-irritation and rest in the horizontal position, I have little doubt of his getting disease of the bone or chest.

A soldier had been for six weeks confined to his room from sprained ankle, was under iodine and depletion treatment, and was no better. I advised him to try the comfrey root, and after a few applications he said he got quite well, and was able to resume duty.

An old lady was suffering from intense synovitis. The joint was greatly enlarged and very tender to the touch, and she had severe pain at night. Comfrey was applied and the inflammation was soon got under, and she was able to move about on sticks, with only a bandage on the joint to keep it steady.

It is a matter of great importance in most knee-joint affections to keep the limb straight and firmly supported till all pain is removed; and my experience is that, though the joint may feel permanently stiff when long in this position, its flexibility will be restored under ordinary exercise and hand-rubbing, and that forcible flexion is not only unnecessary, but injurious. The steel support may be had of any handy gun-smith, and a pin at the outside may occasionally be taken out to allow of gentle flexion, when the patient feels inclined to attempt it. After a time he will dispense with this means of support, and will be content with a soft bandage. I believe that, from its properties of cold and its powers of controlling inflammation, the root is preferable to ice as a local application after excision of joints, and that it is superior to plaster of Paris, Sparks' leather, or starch, to give support to a weak joint. In conclusion, I may state that, in bandaging a joint, it is better to confine the patella than to leave it free.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Diseases of the Heart and of the Aorta. By THOMAS HAYDEN, F.K. & Q.C.P.I.; Physician to the Mater Misericordiæ Hospital. Illustrated. Dublin: Fannin & Co. London: J. & A. Churchill. 1875. Pp. 1,232.

For some time past it has been known that Dr. Hayden was engaged on a comprehensive work on cardiac disease, and those who were cognisant of the zeal with which the writer had pursued his favourite study for many years, looked forward with interest to the collected expression of his matured opinions. Appropriately dedicated to one who twenty-two years earlier produced one of the most masterly contributions to clinical medicine ever written, Dr. Hayden's elaborate monograph may fitly be compared with Dr. Stokes' classical treatise, in quest of the advances that have been gained in the pathology and clinical history of diseases of the heart within the last quarter of a century.

An adequate review of a book on the scale of the one before us would itself swell to a goodly size, and we cannot pretend to do more than indicate a very few of the more important matters which represent recent acquisitions to our stock of knowledge, or upon which the author has formed conclusions of practical value.

We may at once say, without fear of contradiction, that this work is by no means a mere compilation, nor is it a bald collection of clinical commentaries, but it represents an amount of patient toil and zealous determination to get at the truth, which are not common characteristics of modern medical literature.

The style is clear and vigorous, and while the right to criticise is freely exercised, ample recognition is paid to the labours of all from whom the writer has derived assistance. So evident, indeed, is the anxiety of the author to do justice to the opinions of others, that quotations from their writings are liberally inserted, often at considerable length, and thus occasion is given to perhaps the only exception a captious critic might take—viz., that in the course of composition

the work has undergone a process of eccentric hypertrophy until it has reached its present formidable dimensions. On this point we venture to submit that a material curtailment of its proportions could have been effected, without involving an inadequate treatment of the subject, by omitting the first 98 pages (Chapter I.), or, at any rate, the first 70 pages, which deal with the already well-known anatomy of the heart. It is neither more nor less necessary to prefix to a treatise on the diseases of the heart an essay on the anatomy and physiology of that organ than it would be to do the same with a work, say, on affections of the brain and spinal cord. An author is entitled to assume that his readers are on a level with the anatomical and physiological knowledge of the day, else all monographs would be rendered unduly cumbrous.

It should, however, be mentioned, that the lengthened discussion of the principal hypotheses hitherto propounded in regard to the rhythm of the heart is much elucidated by the introduction of cyclical diagrams of the phenomena of the heart's action, and, further, that Dr. Hayden adopts, as most accurately representative of the natural grouping and succession of phenomena constituting a cycle of cardiac movement, a scheme which differs in some particulars from all previous ones, while corresponding most closely with Hyde Salter's theory.

In common with Dr. Stokes' treatise, the main design of Dr. Hayden's volume is to present a clinical exposition of cardiac disease. But one of the distinctive features of the latter is insistence upon an unusually high standard of diagnostic precision, and if any objector should cavil at such refinement as over-strained, the author's answer simply is, if the distinction be founded in nature, and, *e.g.*, murmurs of the special rhythm of those named *interpersonal* be of actual, even though rare, occurrence in disease, then it is sufficiently warranted, and needs no further justification, quite irrespectively of its imputed value as an aid to differential diagnosis (p. 187).

The description of the physical signs of the special cardiac affections is elaborately worked out. The independent diagnostic value of the *quality* of murmurs is advanced, and the author differs from Sir W. Gull and most others in affirming that, in the case at least of mitral regurgitation, the differential diagnosis between organic and functional murmurs is, in great degree, practicable by auscultation alone (p. 813). Again, he maintains that, in the majority of cases, it is possible to establish the diagnosis of fatty heart from the physical signs alone (p. 644).

The exact nature of the temporary murmurs so commonly met with in the course of rheumatic fever has been disputed, and Dr. Hayden, while allowing for those cases in which a murmur is occasioned either by purely functional causes or by the presence of fibrine deposited on the valves, without the occurrence of endocardial inflammation, declares that he has "never met with any satisfactory evidence, either clinical or necroscopic, in support of the doctrine of systolic patency of the auriculo-ventricular orifices from irregular, or spasmodic, contraction of the papillary muscles." More than once he takes occasion to express his belief that by far the greater number of these evanescent murmurs are due to temporary weakness, or atony of the ventricular walls, which yield under the centrifugal pressure of the contained blood, and thus an initial regurgitant murmur may result.

The subject of mitral stenosis and its pathognomonic murmur, even now so hesitatingly recognised by many practitioners, is very carefully discussed, supported on an extensive clinical and pathological basis. The diagnostic value of pre-systolic (Gendrin) murmur, first identified by Fauvel in 1843 as a sign of contracted mitral orifice, may, as Dr. Hayden justly states, be judged from the record of cases in which, mainly from the evidence afforded by it, this condition of the mitral orifice has been diagnosed, and been proved by *post mortem* examination to have existed (p. 211). This record now embraces a total of 37 cases from different observers, Dr. Hayden himself contributing one-third of the quota. In Dr. Hayden's opinion, no other acoustic sign of itself affords equally certain evidence of structural lesion of the heart:—

"The identification of pre-systolic murmur depends mainly upon its rhythm, which coincides with the terminal portion of the long or diastolic pause. It commences at an interval after the second sound, usually considerable, and corresponding to at least two-thirds of the entire pause, but variable in different cases according to the degree of narrowing of the orifice; the greater that degree the more protracted will be the murmur, and the shorter the antecedent silence by which it is separated from the preceding second sound. A distinctly appreciable interval does, however, exist in every typical case between the second sound and the murmur, whilst in no case does a period, however short, intervene between the murmur and the succeeding first sound" (p. 213).

But it must not be forgotten that this murmur occurs under various modifications, and is not rarely fused completely into the

first sound, so that it seems to be but the emphasised initial portion of it. The conclusions which the author feels justified in holding are:—

“(a.) That pre-systolic murmur is pathognomonic of auriculo-ventricular narrowing. (b.) That it is never present where auriculo-ventricular narrowing does not exist. (c.) That it is never permanently absent in cases of this lesion. (d.) That it is very seldom temporarily absent in such cases. (e.) That in these exceptional instances the explanation of its absence is almost invariably to be found in debility of the heart. (f.) That the form of cardiac debility with which the suspension of pre-systolic murmur is most frequently associated is that of the process of dissolution. (g.) And finally, that the duration of suspension depends upon that of cardiac debility, and *in articulo mortis* it may extend over several days” (p. 903).

Hitherto only five sources of error in the identification of this murmur have been noted, viz.:—

“(a.) Pericardial friction-sound of single and systolic rhythm, confined to the area of the apex. (b.) Prolonged systolic murmur replacing the first sound at the apex and extending over the short pause, the second sound being associated with impulse. (c.) Reduplicated first sound audible at the apex. (d.) Post-diastolic murmur of aortic origin transmitted to the apex; and (e.) Pre-diastolic basic murmur transmitted to the apex, the second sound being accompanied by impulse” (p. 906).

“The fremitus of mitral narrowing is located at the apex, and is strictly limited to the apex area. It communicates to the hand a jarring or vibratory sensation; it is usually, but not always, well pronounced, and it immediately precedes the systolic impulse of the heart” (p. 897).

We might point also to the section on Fatty Heart in proof of the thoroughness with which the whole subject is handled, and we may, in especial, call attention to the valuable Tables, constructed from the records of the London and Dublin Pathological Societies, and from the author's own register, which exhibit in summary the latest available contributions in a clinical aspect to the pathology of fatty disease of the heart. They are supplementary to Dr. Quain's statistics published in 1850.

A very important phase of valvular diseases is their relationship to sudden instantaneous death. Yet on this critical question there is a direct opposition of opinion, and this is the more singular, inasmuch as there is only one valvular disease of which

the tendency to kill instantaneously is maintained or controverted—viz., aortic regurgitation. Let us compare two authorities on this point. As the result of his own experience, Dr. Hayden has arrived at the conclusion that, under ordinary circumstances, sudden death is by no means characteristic of disease of the aortic valves, obstructive or regurgitative, or obstructive and regurgitative combined, independently of fatty degeneration of the left ventricle and dilatation with atheroma of the aorta. On the other hand, Dr. Walshe, since 1852, when his attention was excited by an example of suddenly fatal syncope, has observed certainly eight, and probably eleven, similar cases, in which sudden death unaccountably overtook the patient under the most diverse circumstances:—"Here is a case in point. A man, aged about thirty-five, presented himself for insurance. He was a very picture of robust health, and had never had a symptom of disease connected with any organ in his body. Almost purely as matter of form, I put the stethoscope to the chest; my attention was at once arrested by a loud murmur, which proved to be basic and diastolic. The arch of the aorta was sound; there was neither hypertrophy nor dilatation of the ventricle; the superficial pulses were markedly visible. To the astonishment of the proposed insurer himself, and to the passing chagrin of the Board, this, to outward seeming, 'model life' was refused. The man dropped dead in the street within a fortnight of the refusal" (Walshe, 4th edit., 1873, p. 394). It seems to us that this positive evidence outweighs the negative testimony of Dr. Hayden and of Sir D. Corrigan, as maintained in his original memoir.

A good account is given of that rare and curious rhythmical perversion of breathing, sometimes known as "Cheyne-Stokes' respiration;" and the author proposes a theory which he considers to afford a more rational explanation of the phenomena than the highly ingenious one propounded by Dr. James Little.

In the treatment of this distressing form of dyspnoea, Dr. Hayden has found the inhalation of nitrite of amyl the most efficacious means of relief. Ten or twelve drops may be received into the folds of a pocket-handkerchief or napkin, and freely inhaled by the patient, or a few whiffs may be taken, at the acme of respiratory distress, directly from a bottle containing the nitrite.

On the general principles and details of the therapeutics of cardiac disease there is not much room for remark; but it is noteworthy that, in opposition to Walshe and many others, Dr. Hayden

repeatedly avows his faith in the controlling power of mercury over acute inflammation. Thus, in pericarditis, his "invariable practice in acute cases is to administer mercury in small and frequently repeated doses" (p. 412). The metal is prescribed according to Law's method, and is pushed to the extent of slight salivation. As soon as this occurs, a noticeable improvement in the patient's general condition takes place; the pulse will have descended in frequency, and become relaxed, the surface temperature reduced, the breathing less rapid and embarrassed, and the feeling of oppression at the heart less urgent or entirely abolished. A similar line of treatment is recommended in myocarditis and in acute endocarditis.

It is almost needless to add that Dr. Hayden is a believer in the specific power of digitalis as a regulator of the heart's action; and, even in aortic patency, in which this drug has been condemned by Sir D. Corrigan and by Dr. B. Foster, on similar grounds, the use of digitalis in combination with iron and ether is advocated.

One hundred and fifty carefully-noted illustrative cases are disposed under their respective diseases; and seventeen elaborate Tables, relating to the different forms of valvular lesion, to fatty heart, cancer of the heart, &c., form an important contribution to cardiac statistics.

An excellent index concludes a work of which we have given a necessarily imperfect notice, and upon the completion of which we cordially congratulate its author.

In the future, Dr. Hayden's *opus magnum* will, we are confident, win him a wide reputation as an acute and painstaking clinical observer, and must, assuredly, place him in the front rank as an authority in the department of medicine in which he has laboured so long and to such good purpose.

The Madras Manual of Hygiene. By SURGEON-MAJOR H. KING, A.M., M.B.; Professor of Chemistry, Madras Medical College. Madras: Government Press. 1875.

THIS work may be regarded as a miniature Parkes' Hygiene; not that this is an epitome of the latter work, but that it treats of the same subjects in somewhat the same order, but very briefly. Parkes' Manual is a volume for the library, or, at least, study table; King's Hygiene is a book for the pocket. The author modestly

disclaims all pretensions to originality, but he may claim merit for having packed a large amount of valuable information into a small space. Nor has he sacrificed accuracy to terseness, for we look in vain for errors of any consequence throughout the book. It is one that cannot fail to prove serviceable to the Indian medical officer, and, indeed, to many of the educated Europeans, not physicians, who are scattered throughout the presidency of Madras.

Dr. King's work is divided into eleven chapters, and it contains, in addition, five appendices. Air, water, food, soils, dwellings, clothing, exercise, climate and meteorology, military hygiene, and statistics, form each the subject-matter of a chapter. Dictionary-like brevity, omission of references to authorities, and the discussion of only the more important hygienic subjects, characterise the work. The special information relative to the soils, climate, and waters of Madras cannot but prove most useful to the medical officers who are stationed in that presidency. We notice that the waters contain very large amounts of chlorine, varying from 10 to 30 per cent. of the total weight of the mineral constituents, and being abundant in the best waters. Chlorine was, and by some chemists still is, looked upon as a suspicious ingredient of water, indicative of sewage impurity, but it appears to be as abundant in good waters as in bad ones. We cordially recommend Dr. King's Manual, and are glad to recognise in its author a former student of medicine in this city.

RECENT WORKS ON DIABETES.

1. *Diseases of the Kidney and Urinary Derangements.* By W. HOWSHIP DICKINSON, M.D., Cantab.; Fellow of the Royal College of Physicians, &c., &c. In three parts. Part I.—Diabetes. London: Longmans, Green, & Co. 1875. Pp. 236.
2. *On the Relation between Diabetes and Food, and its application to the Treatment of the Disease.* By ARTHUR SCOTT DONKIN, M.D. Edin., M.D. Durham, &c., &c. London: Smith, Elder, & Co. 1875. Pp. 186.

THE portion of Dr. Dickinson's work which is most interesting, as being most novel, is Chap. II., which discusses the pathology of diabetes (mellitus). His observations with reference to the minute changes in the nervous centres which he has observed in this

disease are of importance, and suggest further investigation in this direction. The pathology of a disease so fatal, and yet so strongly and peculiarly marked, has been strangely secret—so much so as to relegate it to the category of purely chemical derangements, independent of structural alteration. The minute changes in the nervous centres to which he refers consists in a vacuolation of the nervous tissue in the brain principally, but also in the spinal cord. Since he first noticed these changes in the year 1868, he has especially examined the nervous centres in eleven cases of diabetes, and has found them in all with such constancy that he cannot but suppose them to be essential to the disease. The microscope is not necessary for their detection, though it is for their description. For their recognition it is only necessary that the brain should be carefully looked at while fresh, or, for their more clear display, should be hardened in any way which allows of the exposure of clear and sharp sections. Large excavations, and pores in cribriform arrangement, thus become evident to the naked eye, which the microscope will explain in detail. The excavations are found about arteries, or in positions which arteries have once occupied. They are sometimes globular, and at their maximum such as would lodge peas. Often they are elongated and narrow, and may be described as tunnels directed by the course of vessels. They are caused by a destruction and absorption of the nervous matter along the course of arteries, and are, at least in some instances, caused by an escape of the contents of the vessel into the surrounding tissues, with consequent degeneration, softening, and removal of the nervous matter which has been permeated by the intrusion. The escape appears to be rather of corpuscles by migration than of blood in bulk by rupture. When the disease has proceeded to its natural end the excavations, which are probably the result of such extravasations, are widely scattered through the brain, numerous, small, and closely set in the white matter of the convolutions; fewer and larger about the central parts. The corpora striata, optic thalami, pons, medulla, and cerebellum are the chosen seats for the largest and most striking holes. In one remarkable instance a large part of the optic thalamus was riddled with cavities of such size and so approximated as to liken it to volcanic lava or Gruyère cheese. The white matter of the convolutions is often rendered strikingly cribriform, in patches, by numerous erosions; more than fifty have been counted within a space of not half an inch square, minute, but distinctly visible to the naked eye.

Each contains a vessel, usually an artery, around which is an irregular interval containing crystals of hæmatine and products of nervous degeneration. These holes he considers as evidently exaggerations of the peri-vascular spaces. In rapidly fatal cases the cavities, which in such are larger than when the disease has been more chronic, are sometimes filled with a translucent, gelatinous substance, containing, besides vascular structure, the granular or globular products of nervous disintegration, with delicate fibrillæ and nuclei, derived in part from the peri-vascular sheath, and apparently in part from the condensed remains of the connective tissue of the destroyed nervous substance. In the more chronic form of the disease, as it occurs in elderly persons, the excavations are usually empty, though the remains of nervous decay are usually to be found fringing their margins, or collected as an irregular sheath upon the dilated or shrunken artery. The changes in the cord are similar to those in the brain, but less declared. Erosions about the arteries are evident, especially in the transverse commissure, the white band of which is sometimes completely divided in the track of one of its large vessels. The most striking change in the cord, however, is dilatation of the central canal, which in the dorsal and lumbar regions is sometimes expanded to many times its normal diameter, and forms a conspicuous object immediately the cord is divided. This expansion of the channel is not constantly present, nor is the author aware at present how far it is peculiar to diabetes. The cavity is occupied by granular products, which appear to be derived, in part at least, from an overgrowth of the epithelium lining it, which is sometimes in these cases in a state of active and irregular proliferation.

Dickinson considers that the pulmonary changes regarded as phthisical or tuberculous, which have long been known as apt to follow upon diabetes, may, with much probability, be ascribed to cerebral irritation directed to these organs ultimately by the sympathetic nerve. Wilks and Pavy have recognised the disease of the lung which ensues on diabetes as of inflammatory origin, and as essentially different from that set up by tubercle, though resembling it in its course and results. Diabetic patients appear to have an exceptional immunity from tubercular formation, or are so seldom the subjects of general tuberculosis as to lead to the inference that there is no pathological connexion between tubercle and diabetes. The destructive process to which the lungs in diabetes are especially prone appears to be a variety of pneumonia—

chronic, circumscribed, and caseating—which rapidly leads to the formation of cavities. The non-tubercular origin of the caseous nodules may be inferred from the general absence of formation especially characteristic of tubercle, of grey granulations in the lungs, and of tubercle-like growths in other organs. The cheesy deposits of diabetes differ from those of tubercular origin in their more rapid excavation, and in their proneness to occur at the lower part of the upper lobe instead of at the apex. The origin of the pneumonic change in diabetes has been ascribed to the contact of saccharine blood, and Pavy has expressed an opinion that if the sugar in the blood is kept down by treatment the susceptibility in question no longer exists. Dickinson, however, has found caseous masses and cavities where the diabetic restriction as to diet has been long and fully enforced; he considers it improbable that saccharine blood should act as an irritant upon the lung, while it has no such effect upon other organs, and observes that local affections do not occur in diabetes as with albuminuria. He considers the pulmonary changes as rather of nervous origin, and quotes in support of his view the occurrence of pneumonia and pleurisy after injuries of nervous structure, and the influence of cerebral impressions upon the vascular state of the lung.

In his summary of the treatment of diabetes mellitus, Dickinson observes it is usually of paramount importance to reduce the production of sugar by diet, the degree of restriction varying with the nature of the case. Medicinally an early and mild case—one in which it is possible that the vascular disturbance may not have proceeded to extensive injury, or destruction of tissue—may sometimes be beneficially treated by opium or codeia; but with such exceptions, and they are few, these drugs fail to check the course of the disease, however they may modify its leading symptom, and are but too often injurious. In severe and advanced cases, where the nature of the cerebral lesions and the observed intractability of the disease are alike discouraging, we can but contravene the symptoms—the inanition, the nervous and general depression, and the inactivity of the bowels. Strychnia, cod-liver oil, and iron are the drugs to which the highest value must be attached, as directed towards this end.

The preface to Dr. Donkin's book states that it is a clinical essay, whose object is purely practical, that of advancing the dietetic treatment of the disease—the only resource of medicine

against it—into a higher and more perfect degree of development, and of placing it on a rational basis. He holds that experience has fully demonstrated that against the disease itself our only resource is *dietetic* treatment; that by this means alone we can expect either to arrest its progress entirely, or mitigate its severity. He does not wish it to be inferred that medicinal treatment is useless, or unnecessary, for the various complications which may arise during the progress of the disease. In considering the dietetic treatment of diabetes, he excludes all simple cases of glycosuria, whether permanent or intermittent, from deficient assimilation of starch and sugar occurring in subjects at an advanced period of life, and laments that the plan of treatment he advocates is too often brought into disrepute by the careless, slovenly, and imperfect manner in which it is applied. His rules for employing the skim-milk treatment are that the skim-milk *regimen must be exclusive*; that the quantity of skim-milk—*properly prepared by the careful removal of the cream*—beginning with four, five, or six pints on the first day, must be increased to more or less gradually, according to circumstances; to eight, nine, ten, eleven, or twelve pints in the twenty-four hours, according to the age, sex, size, and condition of the patient. No rule as to quantity can be laid down to suit individual cases; it must be regulated to suit the requirements of each, *but in no instance should it exceed twelve pints*. Not more than seven or eight pints should be taken in the natural fluid condition. When a larger quantity is necessary, the surplus should be made into curd by the essence of rennet, and taken at separate meals. The skim milk may be taken cold, or warmed to a temperature of 100° or so, but it must not be boiled, because a temperature of 212° alters the physical properties of casein, and greatly impairs its therapeutic properties. The specific gravity of the skim milk used should never be below 1035; that of the best quality is 1040. The daily allowance must be divided into regular meals. The constipation which this diet generally produces must be carefully remedied by the frequent administration of castor-oil, or of some mild saline aperient. The author does not parade this method of treatment as a panacea; his experience of it has led him to the conclusion that if there is no progressive reduction of the specific gravity of the urine and of the sugar it contains after the expiration of a week (all rules having been strictly observed), little or no good will be produced by the treatment, which may then be discontinued, to prevent it from being undeservedly brought into disrepute, such

cases being, except in very young subjects, very far advanced, and not amenable to any kind of treatment whatever. To be effective, the treatment must be *applied in time, as well as properly*. When the treatment has been successful the patient should continue the skim-milk diet rigorously from a fortnight to six weeks after the disappearance of the sugar from the urine. The *second stage* of the treatment should then be commenced; in this stage the quantity of skim-milk is reduced, and some lean mutton or beef and green non-starchy vegetables allowed. The third stage is gradually developed out of the second by the addition of a much greater variety of animal and vegetable food.

Donkin alludes to the recent views of Cantani of Naples, as to death in diabetes by coma from acetonæmia. Acetone appears to be the agent which produces the well-known odour of the breath so peculiar in diabetes; it is a volatile, chloroform-like fluid, produced by the decomposition of sugar in the blood, or system, in diabetes, under conditions not yet ascertained. In the form of blood-poisoning called acetonæmia by Cantani, the patient falls unconscious, and *presents all the appearance of being under the influence of chloroform*. There is generally a very strong smell of acetone in his breath and urine; the muscular debility is extreme; the pupils do not act; when the arms are raised they fall again, like those of a dead man; the abdomen is in a state of meteorism, through paralysis of the intestines; the renal secretion is suppressed; the mucous membranes become dry; the skin is not acted on by revulsives, or only slightly; the pulse becomes small and weak, and finally death ensues. The abundance of acetone exhaled by a patient in this form of coma may strongly impregnate the atmosphere of the apartment. Distinct evidence of acetone has been found in the brain and other organs and in the blood, on the application of chemical tests. The suppression of the urine in the advanced stage of acetonæmia is apparently due to the decomposition of a large quantity of sugar in the blood, and the consequent abolition of its diuretic action, and not to renal disease.

Both the above works will repay careful study; one will be more attractive to those who study diabetes in the living, the other to those who study it in the dead. They are essentially different in their scope, but must be regarded as successful efforts to add to our very slender store of knowledge upon the nature and treatment of this still most mysterious disease.

A Report of Microscopical and Physiological Researches into the Nature of the Agent or Agents producing Cholera. Second Series. By T. R. LEWIS, M.B., and D. D. CUNNINGHAM, M.B. Calcutta. 1874. Pp. 60.

THIS report forms one of the Appendices to the Tenth Annual Report of the Sanitary Commissioner with the Government of India.

The first part gives the results of examination of blood. Healthy blood examined in the fresh state, after treatment with osmic acid, or preserved in wax cells for prolonged examination, never presented bacteria, and only in one case fungi. In this, the fungus was of the form developed from ordinary aërial spores, and occurred only in one of two specimens taken from the same individual, so that it must be looked on as due to accidental contamination. A peculiar irregularity of the surface of the red corpuscles was frequently noticed, which could be produced by pressure, but sometimes occurred independently of this. The authors look on it now, after numerous experiments, as a phenomenon without importance.

In specimens of blood submitted to prolonged observation, granules were liberated, as a result of disintegration, from the white corpuscles, which, if their origin had not been traced, might be mistaken for extraneous particles of bacteroid nature.

In some specimens of blood minute solitary points were seen; these were present in the freshly-drawn blood, moved actively, underwent no development, showed no sign of organisation, and disappeared in a few days.

Minute fibrinous threads, also disappearing at an early period, were sometimes seen. Sarcinæ were never present.

The authors describe particularly certain imperfections in the cover-glasses, which give rise to appearances that might be mistaken for bacteria. They propose to call such appearances "spectral bacteria."

In cholera blood a considerable leucocytosis existed, and the red corpuscles were frequently diffuent, and showed a tendency to aggregate into irregular masses instead of into rouleaux. Fibrinous threads were seen, and after a time vacuolation and disintegration of the white corpuscles. Bacteria, in very small number, appeared only in one specimen after three days, and fungi once after eight days, in another case after fifteen days. In all other instances extraneous bodies were wholly absent:—"As in all our previous

examinations, not the faintest trace of evidence presented itself in favour of the presence of any bacteria or other foreign organisms or germs in the blood in cholera. All the phenomena observed were ascribable to alterations, relative or absolute, in the normal elements of the blood, not to the presence of any new or extraneous bodies of such a nature as to be detected by microscopical research."

Forty-seven specimens of blood taken from five cases at periods varying from twenty-four hours to nine days after *vaccination* gave the following results:—Red corpuscles, generally normal, in some cases irregular (echinulated), in one instance broken up, and in one somewhat diffuent. No increase in white corpuscles. Motile particles in seventeen specimens identical with those seen in normal blood, least abundant in the most successful vaccination, and abundantly present in an abortive case. Bacteria absent in every instance. Fungi in three cases appearing after uncertain intervals, belonging to different species, and not confined to the same case; therefore, certainly of extraneous origin.

In *syphilitic blood* there was the same absence of foreign organisms. "It was thus manifest that as the blood in these two undoubtedly inoculable diseases (in which a multiplication of the poison within the system takes place) showed no evidence of the presence of organised ferments, it is not to be wondered at that we have found it impossible to say, from microscopic examination of the blood, whether cholera should be classed with those few diseases which are known to be inoculable, or with those which are not."

The next question considered is, under what circumstances are bacteria present in the blood? To determine this a very extensive series of experiments were made on dogs, into whose veins or peritoneum various organic matters, choleraic discharges, solutions of fæces, peritonitic fluid, urine, &c., were injected. Purely chemical irritants, as tincture of iodine, liquor ammoniæ, tincture of perchloride of iron, were also injected in two cases into the peritoneum, and healthy animals were killed without previous experiment, and their blood examined at varying periods after death. In 19 per cent. of these animals bacteria were found in larger or smaller numbers. They occurred after the most varying treatment, and were present in several of the dogs who had not been submitted to any experiment before death. But from the tables given it appears very plainly that the development of these organisms took place *post mortem*, for, while in very few instances were they present

immediately after death, they were commonly met with when the examination was delayed for some hours. In the only case in which bacteria were abundant immediately after death, the animal had undergone an injection of liquor ammoniæ into the peritoneal cavity, and was dying when killed.

In their former researches the authors had found, in the mesenteric glands of animals dying after the injection of choleraic fluids into the circulation, peculiar vibrio-like bodies, which they subsequently found in the blood of healthy animals. They therefore examined forty specimens of the fluid from the mesenteric glands of thirty-seven animals, mostly dogs, some healthy, others submitted to various injections previous to death, and of two men dead of cholera:—"In seventeen of the forty specimens bacteria were present in the contents of the glands, but these were *derived from healthy dogs* in no less than ten instances; and the *only* feature common to all the cases in which bacteria and allied organisms were present, was that a certain interval of shorter or longer duration had elapsed between death and the examination of the glands." In the intestinal mucous membrane a similar relation between the presence of bacteria and the period of examination existed, although the results were not so uniform, as during life the intestine constantly contains bacteria-holding substances of all kinds.

The spleen, too, of a healthy dog, examined twelve hours after death, was found full of vibrio-like rods. The authors call attention to these facts, as throwing grave doubt on the relation which exists between the organisms found in cases of malignant pustule, intestinal mycosis, septicæmia, &c., and the disease itself. They say: "We feel that all evidence founded on *post mortem* examinations, however remarkable the phenomena in each case may be, requires most cautious scrutiny; for, even if it be granted that the normal tissues and fluids do not, as a rule, contain the elements of bacteria and remain free of such organisms for prolonged periods under peculiar circumstances, these circumstances, as our experiments show, are certainly not those to which dead bodies are ordinarily exposed."

"When the presence of such organisms is demonstrated during the life of the host, the case is no doubt different; but even here there is a great lack of evidence to prove that they really are causes, and not consequences, of the diseased condition." They have been observed by Dr. Sanderson and the authors as the result of the introduction of purely chemical irritants, and yet their presence

in the blood in these cases cannot be considered as the cause of the diseased condition.

In many diseases to which a vegetable origin has been assigned, a condition of leucocytosis exists. The authors have found such a condition to be incompatible with the development of bacteria, which are always worsted in the struggle for existence so long as the leucocytes are alive and active.

As many of the diseases in which bacteria have been found are very severe and fatal, it is possible that partial death may affect many of the fluids and tissues prior to the death of the organism, so that the bacteria found *ante mortem* may be the result of the partial death, and not the cause of the diseased condition.

We think the following paragraph is well worthy of consideration:—

“It is possible that all the diseases ascribed to vegetable parasites may in reality be due to the influence of such organisms, but the proof of it has yet to be produced, and it is no real advance to ascribe them to such an origin on insufficient grounds. This theory has attractions for many on account of the apparently simple explanation which, if true, it would afford of the multiplication of disease-poisons. But, even allowing that such a multiplication could only take place under the influence of living matter, and not as the result of any mere chemical process, it must always be borne in mind that the manufacture of the poison must, in any case, occur under the influence of multitudes of living cells and particles, cells and particles which may be just as capable of elaborating such poisons as vegetable organisms or other living matter introduced from without.”

In the second part of this report are detailed additional experiments on the introduction of choleraic and other organic fluids into the system.

The authors object to many previous experiments on this subject, on the ground that they have been made on animals, such as rabbits, mice, &c., of very small size and fragile constitution, and that, consequently, the results obtained were discrepant and untrustworthy. For example, it was found that mice which were fed on filtering paper steeped in choleraic fluid became affected with symptoms of cholera; but H. Ranke has shown that on these animals *unsoiled* filter paper produced injurious effects.

The authors of this Report, having found the results obtained with these smaller animals “hopelessly contradictory,” made their further experiments on pariah dogs. These experiments number

two hundred. 1. Twelve experiments on the introduction into the veins of a solution of normal fæces, fresh and unheated, gave a mortality of eight per cent. The dog who died three hours after the injection presented no special *post mortem* lesions. 2. When the fæcal solution was putrid, the mortality was much higher (35 per cent.), seventeen experiments, six deaths. The most fatal period was when the material was three or four days old. 3. Nine experiments, in which fresh fæcal solution, which had been heated shortly before use to 212° , was used, gave two deaths. 4. Four experiments with putrid and heated fluid gave one death, which was caused by pulmonary embolism. The animals who died from the introduction of the fresh boiled fæces presented the symptoms and *post mortem* appearances of severe gastro-enteritis.

5. Fifteen experiments with fresh unheated choleraic material gave seven deaths (46.6 per cent.); and 6. Thirteen experiments with similar material, fresh, but boiled before use, gave seven deaths (54 per cent.), gastro-enteritis being the prominent lesion found *post mortem* in the fatal cases. 7. Four experiments with putrid unboiled cholera material gave no death. 8. Three experiments with putrid boiled cholera fluid gave one death.

From all these experiments it results that choleraic fluid is more active than solution of normal fæces, but that the symptoms produced by both are the same in kind. Further, that heating to 212° does not at all diminish the poisonous properties of the substance employed.

This latter result is of extreme importance in connexion with the subject of disinfection by heat. The authors have in progress experiments on the effects of heat on the infecting principle of small-pox and vaccinia. They detail experiments on the virus of the cobra and of a poisonous Australian snake. These, diluted with water and boiled and filtered from the albuminous coagulum, were found to have not at all lost their toxic properties. In the fresh virus no morphological elements could be detected other than those present in the inert secretion from the fauces of the snake. "Taken altogether, these particular observations would seem to suggest that we should look to the chemist rather than to the histologist for further information regarding the nature of the active principle in the virus of the snake."

It has been stated that an ordinary inflammation of a serous membrane produces a fluid which increases in virulence by its transference from animal to animal. In order to test this, seventy-

three experiments were made. The primary inflammation was excited by the introduction into the peritoneum either of purely chemical irritants, as tincture of iodine or tincture of iron, or of various excrementitious substances. It was found that the supposed increase of virulence did not occur—"for, whereas the introduction of solutions of excrementitious matter into the peritoneum on twenty-six occasions was followed by serious inflammation and commonly death in twenty instances, or nearly 77 per cent. of the cases, similar experiments in forty-two cases, with the fluid product resulting from such primary inflammation, was only successful in ten, or 23 per cent. With two specimens of exudation only were we able to transfer the morbid action more than twice, but on those two occasions the virulent properties manifested were unmistakable. In one case the original irritant employed was a decomposing solution of meat, ninety-six hours old, and in the other, a solution of ordinary alvine discharge."

Why the materials used in all these experiments were in some cases inert and in others pernicious in varying degrees, and why choleraic matter was more poisonous than ordinary fæces, is supposed by the authors to be due to some, perhaps trifling, variation in composition, which decomposing organic substances undergo. The poisonous something in these fluids, which exerts its chief action on the intestinal canal, and which is so destructive to life, has been in vain looked for with the best lenses, and is probably not visible; it cannot be considered as living until it is shown that living matter can retain its vitality when heated to 212° , which has not yet been demonstrated for any known form of living substance.

The concluding part of the report gives the results of section of the mesenteric and splanchnic nerves on the secretion of the intestine. It was found almost invariably that section of the mesenteric nerves of a loop of intestine was followed by abundant watery exudation into the tube, independent of epithelial desquamation, but sometimes associated with exudation of bioplasts on its surface. These results follow complete as well as partial section of the nerves, and their absence in former experiments, when the nerves were completely divided, is attributed to escape of the fluid either from imperfect isolation of the loop of intestine, or from its rupture by ulceration at the seat of ligature.

Section of the splanchnic nerves was without result, whether one or both nerves were divided, and whether the semilunar ganglia were excised or not.

Études de Physiologie et de Pathologie Cérébrales. Des Actions Réflexes du Cerveau dans les Conditions Normales et Morbides de leurs Manifestations. Par J. LUYB. Paris: J. B. Baillière et Fils. 1874. 8vo., pp. 196. Two plates.

THE present work is, the author tells us, a continuation of his book on the structure and functions of the cerebro-spinal nervous system, and is intended to be the first of a series of monographs which will be devoted to the exposition of the complex and varied phenomena presented by the life of the nervous elements.

Every reflex act is divided into three periods—a period of incidence, an intermediate period, and a period of reflexion. In the spinal cord the incident impression is received by the small cells of the posterior horns transmitted to the large cells of the anterior horns, and thence reflected along the motor nerve. In the brain the smaller cells of the superficial layers of the cortex correspond in function as in structure (?) to those of the posterior horns, and the larger pyramidal cells of the deeper cortical layers answer to the large motor cells of the anterior horns.

Although in principle the spinal and cerebral reflex actions are identical, yet great differences exist between them.

“Speaking generally, the cerebral reflex process is amplified and transformed by the proper action of the exclusively cerebral nervous elements interposed in its course.

“It is at first the action of the elements of the optic thalami, which it experiences in its period of incidence; then the action of the purely intellectual regions in its intermediate period; finally, that of the corpus striatum, which it undergoes in its last phase at the moment of its reflexion.

“The sensorial disturbance, at the moment when it meets the proper elements of the optic thalami, transforms itself in a certain way, and undergoes there the peculiar metabolic action of these elements. It is no longer then a crude sensorial impression, as that which is carried by the posterior roots into the posterior spinal regions, and which is reflected towards the motor regions. It is in a manner *spiritualised*, and made more assimilable for the operations of the psychical life for which it is destined.

“On the other hand, in its period of reflexion, the reflex process, after it is propagated through the cortical network, diffuses itself in the networks of the corpus striatum. There it undergoes the

influence of the medium which it traverses, as well as that of the cerebellar innervation, which is, as it were, in a state of permanent tension. And hence, strengthened by these new forces, when it descends to the automatic regions of the spinal axis it no more resembles the excito-motor stimulus of this same spinal axis which propagates itself along the anterior roots, a simple and single disturbance—it is a complex influx, a true dynamic synthesis, in which the innervation of the corpus striatum, that of the pons Varolii, and of the medulla oblongata are closely combined, and which thus passes outward.

“Finally, in its intermediate period, the reflex process is again considerably modified by the media it traverses.

“These are at first the zones of the sensorium and the intellectual zones, which seize on it and modify it on its passage, each according to its own manner.

“On the other hand, the vital properties of the elements which it meets enter into play, and give to it quite new properties.

“The elements of the cortex present, in fact, in a very high degree, the curious property of retaining for a longer or shorter time traces of the disturbances which have thrown them into activity (as by a sort of organic phosphorescence); it hence results that the reflex process which passes through them finds itself enriched in the passage by a new contingent, which represents reserves of impressions of all kinds previously accumulated.

“Very different in that from spinal reflexes, which are all rapid and fugaceous, and the instantaneous reflexion of a direct impression; the cerebral reflex actions have in themselves reserves always ready. They nourish themselves at the expense of the materials of their predecessors. They are apt to be renewed of themselves without new incitations from without, and it is thus that they perpetuate and multiply themselves in a thousand ways, and become, by their richness and fecundity, the exact criterion of the vigour and vitality of the brain which conceives them.”

The normal and morbid phenomena of the reflex manifestations of psychical activity, of intellectual activity, of spoken and written language, of imitation, &c., are treated of in successive sections. It would be quite impossible for us, within any reasonable limits, to follow the author through all his speculations on these subjects. The *résumé* which he gives himself at the conclusion of the work, and from which we have quoted the above paragraphs, occupies sixteen pages. We cannot promise our readers much amusement

from the perusal of this book, which is as dull as any work we ever met with, and for our own part we must confess to having derived as little profit as pleasure from its study. We have but little taste for the physiology that is developed out of the inner consciousness of its author, with scarcely any appeal to anatomy or experiment; and we do not think that it is by such speculations, however ingenious they may be, that any real advance can be made in physiological knowledge.

De la Prostitution dans les Grandes Villes au Dix-neuvième Siècle, et de l'Extinction des Maladies Veneriennes. Par le DOCTEUR J. JEANNEL. Deuxième édition. Paris: J. B. Baillière et Fils. 1874. 8vo., pp. 647.

IN this work the author gives what appears to be a very complete account of the present condition of prostitution in France, and, but in less detail, a description of prostitution in other parts of Europe. The substantial portion of the work is preceded by a short history of prostitution, the greater portion of which is devoted to that of ancient Rome, but in which no information not already given by Acton and others is to be found. To every one engaged in the execution of the laws intended to control the spreading of venereal disease, and to those who desire to legislate in relation to this matter, Doctor Jeannel's work would prove most valuable. It describes minutely the police and sanitary arrangements under which the French brothels are placed, criticises the defects of these arrangements, and suggests numerous improvements, by which, if fully carried into effect, he believes the venereal diseases would be ultimately extinguished. The author describes very fully the domestic economy of the French brothel; the position of its apartments; the *cuisine* of its inmates; the costumes, salaries, and amusements of the "filles;" the titles and employments of the various and numerous *officials* of the establishment (amongst whom we find "rufians," or "maitres"); and the agencies by which its inmates and visitors are procured. The correspondence which usually precedes the reception of a new inmate is conducted with as much ceremony and politeness as might be expected between two ambassadors, or other "high contracting parties." The author confirms the statement made by Acton—namely, that only a small minority of unfortunates terminate their career in infamy. As for by

far the greater part, they are absorbed into the general population, chiefly by the performance of the rite of matrimony. The average period of prostitution is about five years, and it is illegal to receive girls into "houses of tolerance" unless they have attained the age of eighteen years.

The author concludes his very laborious work by asserting that no measures of a purely local character can be of much use as a means of extirpating syphilis, and that the accomplishment of this gigantic task must depend upon a system of international law, rigorously carried into effect by a responsible police.

Lessons on Prescriptions and the Art of Prescribing. By W. HANDSEL GRIFFITHS, Ph.D. London: Macmillan & Co. 1875. Pp. 150.

THE science of prescribing judiciously is to be acquired only by long personal study of disease, coupled with an accurate knowledge of the chemical and pharmaceutical properties of drugs. But the *art* of prescribing correctly, which requires chiefly a knowledge of the principles of pharmaceutical and medicinal combination, is more amenable to the efforts of the teacher; and, within a moderate compass, Dr. Griffiths has succeeded in condensing a considerable amount of information, and has produced, in a very readable form, a handy little work, which we can recommend as a useful guide to students and young practitioners.

Perhaps the most valuable part of the book is the latter half, which is occupied with brief notices of the principal therapeutic groups of remedies—*e. g.*, antacids, anthelmintics, &c. Under each heading a number of examples and exercises in prescribing are given, which appear to be judiciously selected, and, if carefully studied, would save the junior prescriber from many an awkward slip. A convenient posological summary is introduced, but, in the classification adopted, we are surprised by finding, under the vague heading "Hydrocarbons and Alcoholic Bodies, &c." (p. 43), a motley group—*viz.*, chloral hydras, creasotum, chloroformum, æther, æther aceticus, cerevisiæ fermentum, &c. Not a single member of this group is a hydrocarbon in its composition, nor even a carbo-hydrate—a term sometimes inexcusably confused with the former. In the chapter on Incompatibility the chief of Berthollet's laws are enunciated; but it is, we think, preferable,

because much simpler, to reduce the five propositions laid down to two general laws, illustrating the application of these in detail by suitable examples.

Some useful hints on individual incompatibilities are inserted, and at pp. 28 and 30 we notice an error which has escaped revision. It is incorrect to say that gallic acid is incompatible with, or will precipitate, albumen and the vegetable alkaloids. On the contrary, these tests will distinguish gallic from tannic acid.

This small work fills, we think, an acknowledged gap in recent pharmaceutical literature, and we shall be surprised if a second edition be not soon demanded.

Tape-worms: their Sources, Varieties, and Treatment. By T. SPENCER COBBOLD, M.D., F.R.S., F.L.S. Third edition. London: Longmans, Green, and Co. 1875. 8vo., pp. 103.

THIS practical treatise, by a high authority, on the important subject with which it deals, is not intended to supersede the author's more general works on Helminthology. It supplements his treatise on "Entozoa," and his lectures on "Worms." The present edition may be described as a new publication, for 38 out of the 95 pages which compose the book are devoted to a brief clinical record of one hundred cases of tape-worm occurring in Dr. Cobbold's private practice, and now given to the profession for the first time. To secure sufficient space for this new feature, the author was obliged to omit several illustrations, and the chapter on "Thread-worms," which appeared in the second edition. We suppose this was unavoidable, but we regret the necessity which was laid upon him in this instance.

Dr. Cobbold describes no fewer than thirteen varieties of *Tænia*. In a subsequent part of the book he speaks of treatment. Male fern is his favourite remedy; he employed it in fifty-two out of eighty-cases, and in thirty-nine of these it was the only remedy employed. The chief point in the treatment is to secure the expulsion of the head of the parasite, and a close inspection of the stools is required in all cases.

An analysis of the one hundred cases of tape-worm reported will be perused with interest by all clinical students of disease. To such we recommend this book without any reservation.

PART III.

HALF-YEARLY REPORTS.

REPORT ON MIDWIFERY AND DISEASES OF WOMEN.

By ARTHUR VERNON MACAN, M.B., M.Ch., Dubl.; Assistant-Master to the Rotunda Lying-in Hospital, Dublin.

ON THE METHODS AT OUR DISPOSAL FOR BRINGING THE INTERIOR OF THE FEMALE BLADDER WITHIN REACH OF THE FINGER.

It has long been well known that the urethra in the female admits of considerable dilatation without any permanent incontinence resulting therefrom. In modern times dilatation has been resorted to by Sir A. Cooper for the removal of stone from the bladder, and quite recently Christopher Heath (*Med. Times and Gazette*, 1874) has given a number of such cases successfully operated on by this method.

There are two ways in which dilatation can be effected—either gradually, by the introduction, at different sittings, of graduated dilators; or quickly, when this object is attained by the same means during one sitting. Simon gives the decided preference to the latter.

There are three steps in the operation:—1. Incision of the urethral orifice. This is necessary, because it is the narrowest and most rigid portion of the passage. Two antero-lateral incisions are made to a depth of $\frac{1}{4}$ a centimetre, and one posteriorly to a depth of $\frac{1}{2}$ a centimetre. These incisions not only render the introduction of the finger much easier, but prevent any dangerous laceration of the mucous membrane, which otherwise is very likely to occur; and, by shortening the length of the urethra, enable the operator to penetrate from $\frac{1}{4}$ to $\frac{1}{2}$ a centimetre further into the bladder. They do not increase the tendency to incontinence of urine after the operation, very few fibres of the sphincter being divided.

The second step is the dilatation of the passage by means of graduated specula. These Simon prefixes to the finger, which is liable to carry some of the mucous membrane along with it, and thus cause over-distension and subsequent incontinence. Heath, who uses the finger, says that the mucous membrane under the arch of the pubis is always ruptured, and that the patients generally had incontinence of urine for twenty-four hours. Simon has seldom seen the mucous membrane ruptured by the use of the speculum, and only in rare cases was there even temporary incontinence after the operation. There are seven of these graduated specula, the smallest having a diameter of $\frac{3}{4}$ a centimetre, and the largest 2 centimetres. They are made of gutta percha, and to render their introduction easier, each is furnished with a mandrin.

The third step is the introduction of the finger and the palpation of the mucous membrane of the bladder. The first finger should be introduced into the urethra, and the second into the vagina, counter-pressure being made with the other hand over the pubis. By these means the whole mucous membrane of the bladder, except a small lateral portion which is attached to the bone, can be brought within reach of the finger. Even the smallest urethra will admit of this amount of dilatation in the course of a few minutes.

Now, though so high an authority as Sir A. Cooper denies that incontinence ever follows this dilatation, the experience of others proves the contrary. The important point to be determined is, therefore, to what extent may it be carried without there being any danger of subsequent incontinence. This question is overlooked by most writers on the subject, or their statements are too general to be of much value. While S. Hybord ("*Des calculs de la vessie chez les femmes et les petites filles*:" Paris, 1873) states that this dilatation should not exceed a diameter of from 1 to 1·3 centimetres, or a circumference of from 3 to 4 centimetres, Spiegelberg ("*Ueber die Fissur des Blasenhalases, und Bemerkungen ueber die rapide Dilatation der Harnröhre beim Weibe*:" Berlin, *Klin. Wochenschrift*. Ap. 1875. No. 16) says it may be carried, without danger, to a diameter of 2·5 centimetres, or 7·8 centimetres circumference, or even more. These latter figures are as much too large as the former are too small. The true limits of safety are a diameter of 1·9—2 centimetres—or a circumference of from 6 to 6·3 centimetres. Only in very exceptional cases, where several persons had palpated the bladder at the same sitting, did slight incontinence persist for twenty-four hours.

In two cases, where, in order to remove papillomatous growths from the inside of the bladder, it was necessary to introduce an instrument through the urethra as well as the finger, the dilatation was carried still further—viz., to 7 centimetres. Inability to retain the urine for more than one or two hours followed these operations, which disappeared in three or four weeks. Simon thinks that any further dilatation would certainly be followed by incontinence. He has now performed the operation sixty times, and in no instance has any permanent inconvenience resulted from it.

The indications for its employment are—

1. For the diagnosis of diseases of the mucous membrane of the bladder.
2. For the diagnosis and removal of stones or foreign bodies.
3. For applying strong caustics to the mucous membrane of the bladder in cases of intractable catarrh.
4. For healing fissures of the urethra.

All these indications have been given by others. The following are especially Simon's own; viz.:—

5. To enable us to detect the amount of the defect in the vesico-vaginal septum where the vagina has been closed for the relief of vesico-vaginal fistula. In two such cases Simon diagnosed that the injury was remediable. He, therefore, laid open the vagina and closed the fistula by the ordinary operation.

6. To enable us to diagnose the seat and extent of tumours and growths that occupy the vesico-vaginal septum.

7. To remove papillomatous growths from the walls of the bladder.

8. To enable us to diagnose and remove small urinary calculi when they have become arrested in the vesical portion of the ureter.

9. To enable us to open a hæmatometra, the removal of whose contents through the vagina is either impossible or dangerous. By this method we do not wound the peritoneum, which could not be avoided if we operated through the rectum.

10. To enable us to heal vesico-intestinal fistulæ by cauterising their edges. The only possible relief for these cases, up to the present, was the very unpleasant alternative of the formation of an artificial anus.

The second method by which we are enabled to palpate the mucous membrane of the bladder is by making an incision through the vesico-vaginal septum. From the observation of some cases of vesico-vaginal fistula, where the everted bladder formed a tumour

the size of the closed hand outside the vulvæ, Simon thought it might be possible, by making a proper incision through the vesico-vaginal septum, to evert the vesical mucous membrane. This he has done several times on the dead body. When the object for which this is done has been accomplished, the edges can readily be united by another operation.

The indications are:—

1. In cases of stones that are too large to be removed by dilating the urethra.

2. To insure the bladder being kept quite free from urine, in cases of intractable catarrh of the mucous membrane with ulceration.

The T-shaped incision and eversion of the mucous membrane is indicated—

3. For the removal of such growths and tumours from the interior of the bladder as cannot be removed by dilating the urethra.

4. To enable us to operate on vesico-intestinal fistulæ.

Dr. Tuchman has lately published a paper on the possibility of closing the vesical orifice of the ureters by means of an instrument made on the principle of the lithotrite (*"Ueber den Verschluss der einen Harnleitermündung," &c.—Deutsche Zeitschrift für Chirurgie*, Vol. V., Part I.: Leipsic, 1875). This operation Dr. Tuchman performs on the male subject, but, of course, it is much easier to perform it on the female, if we dilate the urethra and then pass the finger into the bladder to guide the instrument to the orifice of the ureter. Dr. Simon can now, in the vast majority of cases (15 out of 17), pass a sound or fine catheter into the orifice of the ureter. Once the point of the instrument is inserted into the orifice there is no difficulty in passing it along the ureter as high as the brim of the pelvis. If the handle of the sound be now raised and approximated to the thigh of the same side, the sound or catheter can be readily passed as far as the pelvis of the kidney.

Simon thinks this will enable us to diagnose stone in the ureter, or even in the pelvis of the kidney—or, whether both kidneys are involved, or only one. By it, too, we may perhaps be able to push a stone back into the pelvis of the kidney, if it has not gone far down the ureter; to dilate a stricture of the ureter, or draw off the water in a case where hydronephrosis is caused by valvular obstruction at the commencement of the ureter.

Dr. E. Noeggerath, of New York, recommends the dilatation of the female urethra as a means of extending our powers of diagnosis

in cases of disease of the uterus and its appendages, more especially the latter. His method of dilatation is almost identical with that already described, only that he does not find it necessary to make any incisions around the orifice of the urethra. He does not find that it causes much pain, and does not, therefore, like Simon, advise that the operation should be performed under chloroform. In some cases there was slight hæmorrhage and pain after the operation.

To take full advantage of this means of diagnosing uterine disease, one finger should be passed into the rectum, while a finger of the other hand is passed into the bladder. If there still remain any doubt as to the nature of the affection, the uterus can be drawn down by an assistant, so that the fundus lies between the two fingers, where it can be palpated as accurately as at a *post mortem* examination.

Noeggerath has dilated the urethra already thirteen times, and gives four illustrative cases in full. We hardly think these cases are much calculated to illustrate the value of the proceeding as a means of diagnosing uterine affections. For in the first case given the dilatation was undertaken for the relief of vesical troubles, which were supposed to depend on a tumour situated in the vesical wall. The tumour was diagnosed, after the dilatation, to be a displaced ovary, and the dilatation seems to have relieved the vesical trouble. In the second case the urethra was dilated, and the woman examined three or four times, being put under chloroform once, for a tumour that turned out to be a collection of fæces in the sigmoid flexure, and which disappeared after the woman had taken a dose of sulphate of magnesia every day for a week. In the third case a diagnosis (a doubtful one it seems to us) of chronic catarrh of the Fallopian tube was made, which did not aid much in the treatment; while in the fourth, the woman proved to be pregnant, though how far she was gone is not stated.

The author insists on the necessity of washing out the vagina, before the operation, with a solution of carbolic acid, and of using some disinfectant to lubricate the finger, in order "to counteract the effect of vaginal mucus on the urine as a cause of alkaline fermentation."

ON THE NORMAL POSITION OF THE UTERUS, AND ON
PATHOLOGICAL ANTEFLEXION.*

It seems strange that after so much has been written and talked about displacements and flexions of the uterus, gynæcologists are not yet unanimous as to what the normal position of the uterus really is, or whether it is normally anteflexed or not. One would think that as we have means at our disposal for ascertaining with accuracy the position and shape of the uterus at any given moment, such a question could not long remain unsettled. The paper we would now wish to draw the reader's attention to is, however, a new proof that unanimity is not yet attained. The author of it, Professor Schultze, is already well known by his writings on the normal position of the uterus and on its displacements (vide *Archiv f. Gynæk.*, Vol. IV., and No. 50 of Volkman's *Sammlung Klin. Vorträge*)—the former being, he maintains (when the bladder is empty), one of anteflexion. The present paper is written with the object of removing the impression that he implies by this theory that there is no such thing as pathological anteversion or flexion. He never denied the existence of such pathological conditions, but only said that if anteflexion or anteversion were the normal condition of the uterus when the bladder was empty, it would be now much more difficult than formerly to diagnose a pathological anteflexion. If, he says, a woman is placed on her back with the knees drawn up and the hips pushed well forward, and the first two fingers of either hand be introduced into the vagina, the first being bent up into the anterior *cul de sac*, and the tip of the other placed on the os, we can feel (if the bladder is empty) the body of the uterus leaning, as it were, against the finger in the anterior *cul de sac*; and if the other hand be placed on the abdomen, the fundus of the uterus will be felt just above the pubis, or almost perpendicular; that if the bladder be full, and a catheter be passed and the water drawn off, we can feel the fundus moving forwards and upwards as the bladder becomes empty. Now, in the case where Henle made a median section through a frozen female corpse, the uterus was found in a state of retroversion. Schultze accounts for this by supposing that gravity caused the uterus to fall backwards after death.

Now, if the normal position of the uterus during life is one of

* Professor B. Schultze. *Archiv für Gynäkologie*. Band VIII., Heft 1.

anteflexion, and if the uterus is found after death in a state of retroversion from the effect of gravity, we must either suppose that the connective tissue in the ligaments of the uterus become relaxed, or that the position of the uterus during life is determined by muscular action. The time that had elapsed since death was too short for the former of these to have taken place, and therefore Professor Schultze concludes that the uterus is kept in its position of anteflexion or anteversion during life by muscular action—the muscles that effect it being those described by Luschka under the name of *musculi retractores uteri*. They are situated within the layers of Douglas' folds, and tend by their action to approximate the cervix to the second bone of the sacrum.

What is then the change that takes place in the shape and position of the uterus when the bladder is suddenly emptied? The fundus passes forwards to occupy its place, and the cervix is drawn backwards by these muscles. The vaginal portion being to a certain extent fixed by the vagina, cannot pass backwards to the same extent as the fundus passes forwards, and we get a flexion at the junction of body and cervix. Thus the normal uterus may be considered as constantly changing its angle of flexion according to the varying size of the bladder. Anteflexion becomes a pathological condition, according to Schultze, as soon as the uterus becomes fixed at any one angle or in any one position.

What means have we of diagnosing this rigidity or fixation? We may perhaps detect a rigid state of the uterus by passing the finger into the posterior *cul de sac*, or into the rectum, and pressing it against the angle formed at the junction of the body and cervix. By moving the fundus by means of the other hand we can find out if the angle of flexion remains constant or not. We can perhaps assure ourselves that the angle is the same, whether the bladder be full or empty, though this is more difficult. Or, again, we may find some other pathological condition present which we have learnt from experience keeps the uterus permanently anteflexed—such as tumours, either within or without the uterus; adhesions between the fundus and the anterior abdominal wall; increased weight of body of uterus; increased length of the vaginal portion; or perhaps shortening of the round ligament. These are all rare, a much more frequent cause being rigidity and shortening of Douglas' folds. This condition can generally be diagnosed, even if we cannot feel the folds themselves, by the vaginal portion lying high up and very far back, and its direction being almost directly

forwards, the uterus at the same time being fixed, and any attempt to move it painful.

That ante flexion is really caused by this shortening of Douglas' folds, is further proved by its disappearing as the inflammation in Douglas' folds becomes resolved to reappear when there is any relapse. In some cases Schultze has seen the uterus change its position from ante flexion to retro flexion as the parametritis became resolved, the latter condition being caused by weakening or destruction of the muscoli retractores uteri from long inaction or from pressure. The most frequent cause for this parametritis posterior is over-distension of Douglas' folds from constipation, or great disproportion of parts in coitus.

There are three stages in the disease:—1. The inflammatory stage marked by pain on pressure, or on any attempt to stretch the folds. This stage frequently ends in spontaneous resolution. 2. The stage of cicatricial fixation. This, though of very old standing, may be brought to resolution by proper treatment. Whether it ever undergoes spontaneous resolution, Schultze cannot say. 3. In this stage the uterus has regained its mobility, but the angle of flexion is greater than usual when the bladder is empty. This condition cannot be diagnosed from the so-called congenital ante flexion except by the history. The symptoms of this affection vary greatly according to the stage of the disease and the nature of the complications. Nearly all the women were chlorotic, and a large majority were subject to dysmenorrhœa, or were sterile, or both. The dysmenorrhœa was observed only in the first or inflammatory stage, and not in the second. From this Schultze concludes that it is the parametritis that causes the dysmenorrhœa, and not the flexion. This does not agree with the generally received theory of the cause of the dysmenorrhœa. It is generally thought that the pain is caused by distension of the uterus from menstrual fluid, which is prevented escaping by the closure of the cervical canal by the flexion. That this is not the true explanation may be seen from observing the intermittent character of the pain. The usual history of such a case is that before any flow of blood is noticed the patient has most violent pains, which continue as long as the discharge is slight, cease when it has become well established, and reappear as the flow again becomes scanty. If the above theory were right, the pains should be most violent when most fluid was being secreted, for then the distension of the uterine walls would be the greatest. Scanzoni states that twenty times he

has introduced the sound into the uterus as soon as the dysmenorrhœic pains were well established, and drawn it out without there being a trace of blood on it. Schultze has also frequently made the same observation. It is of course always possible that as well as ante flexion there may be also stenosis.

Schultze thinks that the sterility is also caused by the parametritis, and not by the flexion; for he has often known women to conceive shortly after the inflammatory stage had ceased, while the uterus was still permanently ante flexed.

The treatment should be directed to remove the parametritis posterior, and not to getting rid of the ante flexion.

IS TURNING TO BE PREFERRED TO THE FORCEPS IN CASES OF CONTRACTED PELVIS?

Before any comparison of these two operations can be made, it is necessary, first of all, to settle exactly what the conditions are under which they can be considered as rivals. These are, according to Löwenhardt (*Archiv, für Gynäkologie*. Band VII., Heft 3): First—The amount of deformity must not be so great as to render it impossible that a living child can be extracted. If the amount of deformity excludes the possibility of a child being drawn through it alive, then our choice has to be made between perforation and the Cæsarean section. Second—The child must be alive, or at all events most probably alive; for we should never perform any operation which would in the least increase the risk of the mother for the sake of a child that was not in all probability alive. Third—The head must present. Now, the exact amount of deformity that will allow of a living child being drawn through cannot be absolutely fixed and expressed in inches or centimetres, for it depends to some extent on the skill of the operator, and to a far greater extent on the size of the child itself. We may, however, fix its lowest limit at 7·5 centimetres (3 inches), or a little under.

The question is, therefore, whether, in a case of pelvic narrowing in which all these conditions are fulfilled, we can effect delivery, with the least amount of risk both to mother and child, by applying the forceps or by turning. Löwenhardt thinks that a careful analysis of his cases ought to settle this question, the more so as he has been led by experience to turn now in exactly the same sort of case where formerly he put on the forceps. From his first and second Tables, in which are given all the cases (218 in number) where the forceps were used and the occasion for their use, he

considers himself justified in saying that he knows no better, safer, or pleasanter treatment for the many slight irregularities, no better substitute for the pains of labour, no safer means for quickening delivery, than the forceps; but that the danger of using them in cases of pelvic deformity is so great, and increases so out of all proportion quicker than the amount of the deformity itself, that even a slight amount of pelvic narrowing should be considered as an absolute contra-indication for their use.

In these cases the danger to the mother increases much more quickly with the amount of deformity than the danger to the child. The total number of forceps cases in which the above three conditions were fulfilled was 45. Of these, mothers, 6.6 per cent. died, 46.6 had some serious complication during the puerperal state, and 46.6 made good recoveries. Mortality was 45 per cent. Now, if we turn to his Table of cases where turning was performed under as nearly as possible similar conditions, the number of which cases is 20, we find that not one of these mothers died, or had any serious complication during childbed, and that the infant mortality was only 15 per cent.

Though the numbers given are not large, still Löwenhardt thinks they are sufficient to show the great superiority of turning over the forceps in all cases of deformity.

Löwenhardt always combines extraction with turning, as he considers the danger to the child commences the moment the smallest portion of its body is exposed to the air.

To avoid, if possible, the unpleasant accident of the arms becoming extended over the head, as soon as he has got the foot or feet into the neighbourhood of the os, he lets them go, and passes his hand up again, and places the arms across the chest if they should happen to have left this position—in some cases he has succeeded in putting a noose over them, which ensured their remaining across the breast, and facilitated greatly the extraction. The forceps, he thinks, are of great use where there is any tendency to extension of the head, or where, from rigidity of the vulvæ or perinæum, there is great difficulty in keeping the head flexed by the finger in the mouth.

Dr. Gordell has also lately given us the result of his experience of the two operations in cases of pelvic deformity (*American Journal of Obstetrics*, August, 1875). Some of these cases are of great interest, and we will try and give, in as few words as possible, the more salient points of each:—

CASE I.—Second labour, the first having been terminated, “after many hours’ hard tugging at the forceps” by craniotomy, after the woman had been four days in labour. The second child was turned for prolapse of the cord, and was still-born. The conjugate diameter measured “less than” 3·5 inches, and the child weighed 8 lbs. 5 ozs.

CASE II.—Disproportion from great size of child (13 lbs.); forceps tried in vain; child turned, and delivered still-born.

CASE III.—A second labour, the first having lasted 48 hours, though the child weighed less than 5 lbs. Conjugate diameter “a trifle over” 3 inches. Child born asphyxiated, but speedily recovered. It weighed 7 lbs. 12 ozs., and had a deep furrow on the right side of the head.

CASE IV.—Primipara; conjugate diameter “somewhere about” 3·5 inches. No difficulty in the extraction, and child, which weighed 5 lbs. 14 ozs., was strong and lusty when born.

CASE V.—A dwarf in labour with her fourth child. Her previous labour had been terminated with the forceps after traction had been applied by another practitioner for five, nine, and three hours respectively. Two of these children were born alive, though badly marked. The conjugate measured 3·32 inches. Gordell turned the fourth child, which was born alive. It weighed 7 lbs. 10 ozs., and had a deep depression in front and above the ear.

In her fifth labour the child was again turned. It was born alive, weighed 6 lbs. 14 ozs., and had an indentation on the head.

In her sixth labour the child was again extracted alive after turning. It weighed 8 lbs. 4 ozs.

CASE VII.—The woman’s fifth labour. Three of her children had been born mutilated, and in pieces. The fourth was premature. The conjugate measured only 2·82 inches. The child was turned, but was still-born. It weighed 6 lbs. 12 ozs.

CASE VIII.—Her second labour. The first had been terminated by the forceps and craniotomy, and was followed by vesico-vaginal fistula. The conjugate was between 3 and 3·5 inches. The pelvis uniformly contracted. Child was born alive, and weighed 5 lbs. 6 ozs.

CASE IX.—Second labour, the first being terminated by a tedious craniotomy operation. Careful measurement of this pelvis gave a conjugate of 2·82. The forceps were then tried for an hour in vain. The child was then turned, and was born asphyxiated, but soon recovered. It weighed 8 lbs. 6 ozs.

Now, of these ten cases one mother died of convulsions, and one had a slight attack of peritonitis; but, with these exceptions, the women recovered as quickly as if the labour had been natural, and not in a single instance was the catheter required.

Gordell then proposes the following questions:—What amount of traction on a child's neck is compatible with life? What amount without decollation? What is the amount of extractive force that can be brought to bear on the child? What is the best method of making traction? What is the limit of conjugate narrowing through which an average-sized head can be made to pass?

What amount of traction on a child's neck is compatible with life? Mathews Duncan says that 105 lbs. is the maximum weight the neck can bear without yielding, and 120 lbs. before it tears off. Joulin, however, has applied as much as 148 lbs. to the neck of a dead foetus without separating the head from the trunk. Gordell has on several occasions delivered living children after having put a traction of 130 lbs on their necks. He has also twice delivered living children after hearing the neck give an audible crack. (In *British Medical Journal*, Sept. 19, 1874, p. 384, several similar cases are given by Dr. Braxton Hicks, Steele, and others.)

Joulin estimates the traction that a strong man can exercise with his arms alone at 113 lbs. If the feet are purchased against anything on the floor, this becomes increased to 150 lbs., and if against the edge of the bed, it rises to 225 lbs. In Case VIII. (*vide* above) Gordell estimated the traction he put on the child's neck at 150 lbs., while an assistant made pressure over the pubis to the amount of 50 lbs., giving a total extractive force of 200 lbs.

Gordell considers that the position on the back is better than that on the left side, as giving both the operator and his assistant more power. The mechanism of delivery in these cases, where the sacro-vertebral angle is very prominent, is, that one side of the head gets fixed against the promontory, and the other side sinks with the pelvis by making a movement of rotation round it. In order, therefore, to facilitate this rotation, Gordell recommends that traction should first be made in the axis of the outlet, in order

to bring the side of the head next the promontory down as far as possible, and then, the traction being rather increased than diminished, the feet should be swept back till the traction is being made in a line posterior to the axis of the brim. By this manœuvre the sacral side of the head gets bent in, and the pubic side descends into the pelvis. This change in the axis of the traction may be made several times, the effect being exactly similar to the side-to-side motion which is so useful in some cases when extracting with the forceps. Gordell says that once the head has passed the brim, rotation and flexion takes place spontaneously. He places the limit of the deformity through which a mature child can be extracted alive by turning at 2·82 inches, though we are at a loss to see why. For he has given us a case (No. 9) in which he extracted a living child, which weighed 8 lbs. 6 ozs., through a conjugate, which, by careful measurement, was found to be 2·82 inches. If, now, a child of 8 lbs. 6 ozs. can be delivered alive through such a conjugate, a child of 7 lbs., or even 6½ lbs., which might be quite mature, could be extracted alive through one considerably less. At the same time, he thinks no credence can be placed on the statements of Madame Lachapelle, that she extracted children through conjugate diameters of 2·75, 2·5, 2·25, and 2·2 inches.

In conclusion, the author would confine turning to cases of antero-posterior narrowing—giving the forceps the preference where the pelvis is uniformly contracted. Now, this latter deformity is very hard to diagnose, and the author gives us a very practical hint, founded on the well-known difference in the relative position of the two fontanelles when the head is passing through a pelvis with only antero-posterior narrowing, and through one that is narrowed in all the diameters. He says transverse narrowing may be inferred when a strongly flexed head lies obliquely, yet does not engage or descend. He also thinks that though the forceps cannot compete with turning in very narrow pelves, its range of usefulness or applicability will be greatly increased when it has become the rule, as it is in New York at present among the best obstetricians, to apply the blades to the sides of the child's head.

Without at present going through the various reasons that have been given by the supporters of this treatment to account for the head passing more readily through the contracted pelvis after turning than when it is the presenting part, we will give briefly a new reason that is brought forward by Cohnstein in the *Archiv für Gynäkologie*, Band VII., Heft 1.

It has been shown by Fehling that the head undergoes an absolute diminution in volume during natural labour. This is due to the pressure of the pelvis on the bones of the cranium, causing them to overlap, and thus drive a certain quantity of cerebro-spinal fluid out of the cranium into the spinal canal. Now, it struck Cohnstein that the readiness with which this depletion, if I may so call it, of the cranium takes place must be greater when the head was following the trunk than when it was presenting; for in the former case the force of gravity tended to aid the depletion, and in the latter it acted with gradually increasing power as the column of fluid in the spinal canal became larger to hinder it. On anatomical grounds, too, the depletion should take place more readily when the head was coming last, for then the pressure would be made chiefly on the base of the brain, where the largest collections of this fluid are situated. It seemed to him therefore to be worth while putting this to the experimental test by measuring the fronto-occipital circumference, the antero-posterior, and transverse diameters of children's heads that were subjected to, as nearly as possible, the same amount of compression, both when the head was dependent and when the feet were. He has made these measurements on the heads of twenty children, and found that there was, on an average, a difference in the fronto-occipital circumference in the two positions of from .75 centimetre.

Gordell, in the paper we have already quoted from, tries to explain the reason why turning is not more universally adopted in cases of pelvic narrowing than it is; and puts it down, in a great measure, to the "bad luck" most practitioners have with ordinary breech cases. This may to some extent be true, but we are rather inclined to think that the chief cause is that in cases of contracted pelvis one has to make up his mind to perform an operation at a time when there may seem very little necessity for any interference unless you have been able accurately to measure the extent of the deformity. That it will often be too late to turn when you have failed to extract with the forceps will be apparent to everyone. Schroeder puts this point so plainly in his "Midwifery" that we shall give his own words (4th ed., p. 539):—

"Up to the present moment it is a mooted question whether the forceps are to be preferred to turning in cases of contracted pelvis. We have already shown (Schw., *Geb. u. W.*, p. 106) that the very question rests on a misconception, and we agree entirely with Stein that the two operations mutually exclude each other; in other words, if turning is

possible, the forceps are contraindicated ; if the forceps are indicated, the time for turning has already gone by."

ON A HITHERTO UNRECOGNISED CAUSE FOR POSTPARTUM
HÆMORRHAGE.

Ever since Gooch wrote his celebrated paper "On a Peculiar Form of Hæmorrhage from the Uterus," all obstetricians recognise a form of *postpartum* hæmorrhage which takes place, even though the uterus is well contracted and firm. The explanation given by Gooch to account for this apparent anomaly is that an excited state of the circulation may force blood out through a uterus that is contracted firmly enough to resist the ordinary pressure of the circulation. This explanation is by no means a satisfactory one, and one of our greatest modern authorities considers that such hæmorrhage is always due to laceration of the cervix (Barnes' "Obstetric Operations," p. 455). Arterial hæmorrhage from rupture of an artery in the perinæum is also well known, though no great importance has been attached to it as it ceases invariably spontaneously. But there is a source of violent *postpartum* hæmorrhage which has little, if any, tendency to stop spontaneously, and which has in several instances proved fatal, to which attention has only recently been directed, as may be judged by there being no mention of it made in any of our English text-books—viz., rupture of one of the crura of the clitoris, or of the mucous membrane in its vicinity. It is to this source of *postpartum* hæmorrhage that M. Larogenne has drawn the attention of his countrymen in an article contributed to the *Lyon Médicale* for April 25th, 1875. The only French text-book in which it is even mentioned is that by Joulin, by far the best account of it being that given by Schroeder in his "Midwifery" (4th edition, p. 635). It was first described by Klaproth, who gives the details of five cases. That it is not a very rare affection is shown from the fact that Winckel met with it nine times in 2,000 labours, and Schroeder seven times in 286. That it is a very serious accident, if not recognised, is shown by the fatal case given by Poppel (*Monatsch. f. Geburtsh.*, B. 28, p. 298), and by three fatal cases mentioned by Müller. Hæmorrhage from this source has often been taken for Gooch's peculiar form of hæmorrhage. The diagnosis is of great importance and is not hard, if the possibility of such a source be present in the practitioner's mind. Careful inspection will always reveal its source, and our diagnosis will be assisted by the hæmorrhage

following immediately on the birth of the child, and continuing after the expulsion of the placenta, though the uterus be hard and well contracted. The blood is also usually of a more florid colour than that in ordinary *postpartum* hæmorrhage. Sometimes the blood escapes in jets, more frequently it oozes out of the cavernous tissue like out of a sponge. If not very violent, it may be stopped by a stream of cold water. If this fails, we should dip a small compress of lint in a solution of perchloride of iron and apply it to the source of the hæmorrhage, at the same time bringing the woman's thighs close together. In some cases a pin and ligature may be necessary. M. Larogenne thinks that as the injury is caused by over distension (it seldom occurs in pluriparæ), the prophylactic treatment should consist in incising the perinæum, and thus lessening the pressure of the child's head on the parts beneath the arch of the pubis.

OPERATION FOR THE CURE OF RUPTURE THROUGH THE CERVIX OCCURRING DURING LABOUR.

A new operation that has been performed by its originator two hundred times—in no case without ultimate benefit to the patient—and which has been spoken of in terms of the highest praise by some of the leading obstetric surgeons in America, must certainly be worthy of our careful attention. It is described by its originator, Dr. T. A. Emmet, in the *American Journal of Obstetrics* for November, 1874. Its object is to restore the canal of the cervix, which has been, as it were, laid open during labour. Slight rupture of the cervix takes place almost without exception in first labours, and, as a rule, leaves no trace behind, except the slight change in the shape and size of the os that distinguishes most women who have borne from those who have not. It may take place at any part of the cervix, but is most frequently seen at one or other side. In some cases it is bilateral. The effect of this, according to Dr. Emmet, is, that the pressure of the uterus from above everts the anterior and posterior lips, which become in time flattened out on the anterior and posterior vaginal walls. Irritation is thus set up, which leads, first of all, to subinvolution, and then to increased discharge from the mucous membrane of the everted cervix. Slight erosion now takes place at some point, and gradually spreads over the whole everted surface. As the case goes on, the woman begins to suffer profuse cervical leucorrhœa, and generally from frequent and profuse menstruation. She will

then most probably be treated for ulceration, and, from the frequent application of caustics, the surfaces may become cicatricial in character, and cease to secrete profusely. The hypertrophy of the uterus will remain, and the woman will become a confirmed invalid. If the case is left more to nature, it may end in atrophy of one or both lips of the cervix from inflammation and rupture of the follicles embedded in the cervical mucous membrane. The woman will probably cease to menstruate at an early age, and will then either recover or fall into phthisis.

The diagnosis is often difficult, unless the physician is well acquainted with the affection, as the lips of the os get so flattened out that all evidence of a line of junction between the cervix is lost. In doubtful cases the diagnosis is made easier by placing the woman on her hands and knees, when the action of gravity restores the normal shape of the cervix. Another great aid to diagnosis is to draw down the anterior and posterior lips by means of a tenaculum fixed in each, and if this restore the C shape of the cervical portion, the indications for an operation are obvious. The patient should be put through a course of preliminary treatment for some weeks before the operation. This should consist in warm (100° Fahr.) vaginal injections, and sprinkling the everted lips with sulphate of iron or Monsel's salt* once a week, and the application of tannin in glycerine every second day. The operation itself we need not describe. The only points that require attention are—not to cut too deeply at the angle between the two flaps when paring the two edges, for the circular artery of the cervix is usually very superficial, and not to twist the sutures on one side before you pass the sutures through the other. The sutures may be removed about the eighth day. The operation is never followed by much inflammation, and in only one case did cellulitis occur. The uterus will soon regain its normal size after the operation, but, of course, if the perinæum be lacerated, which it often is, the patient should wear a Hodge's pessary to prevent prolapse.

The next operation that we will describe is nearly the converse of Dr. Emmet's, and is that adopted by Professor Simon, of Heidelberg, in cases where there is stenosis of the cervical canal, and more especially of the external os, or hypertrophy of the

* This is the *Liquor Ferri Subsulphatis* of the U.S. Pharmacopœia. The ingredients used in its preparation are—Sulphate of iron, in coarse powder, *twelve troy ounces*; sulphuric acid, *a troy ounce and thirty grains*; nitric acid, *a troy ounce and three hundred grains*; distilled water, *a sufficient quantity*.

vaginal or supra-vaginal portion of the cervix. It is described by Dr. Marckwald in the *Archiv für Gynäkologie*, B. VIII., H. 1. It consists in the excision of a cylindrical wedge-shaped piece of the cervix, the base of the wedge looking towards the vagina. It is performed in the following way:—The woman being placed on her back, and the vagina held open by Simon's modification of Sims' speculum, one lip of the cervix is grasped with a pair of forceps, and the uterus drawn down as near to the vulva as possible. The cervix is then slit up on both sides to within a short distance of the fundus of the vagina, either with a pair of scissors or a scalpel. Two incisions are next made, one parallel with the edge of the cervix, and the other parallel with the external edge of the vaginal portion. These are continued upwards into the substance of the cervix, so as to converge, and thus cut a wedge-shaped piece of uterine tissue out of each lip. The depth of this wedge is, in general, determined by the length of the vaginal portion, but in some cases its apex should reach to the level of the inner os. When this has been done, the sides of the wedge are brought into apposition by sutures, and the edges of the two lateral incisions also joined, and thus the vaginal portion restored, the chief result of the operation being to enlarge the cervical canal, and especially the external os.

The advantages claimed for this operation are:—1. That it is perfectly safe. 2. There can be no secondary hæmorrhage. 3. The os and cervical canal are enlarged, and have no subsequent tendency to contract. 4. If the point of the wedge is prolonged to the height of the internal os, that can also be permanently enlarged. 5. The necessary manipulation is not difficult, and the patient usually recovers from the effect of the operation within eight days.

Another operation on the vaginal portion has lately been proposed by Dr. Pallen, of New York, for doing away with the necessity of amputation of the cervix in some cases of apparent hypertrophy. It sometimes happens that when the vaginal portion seems elongated, if we pass the sound we find the uterus and vaginal portion taken together are out of normal length, the uterus being, as it were, set too low in the vagina. Dr. Pallen thinks that amputation in such a case is but mutilation. He, therefore, makes two circular incisions through the mucous membrane of the vaginal portion, the upper one being about three lines from the roof of the vagina in front and two lines behind, the lower one as near the lower edge of the cervix as possible, and removing a

circular portion of the mucous membrane in the shape of a cuff. The mucous membrane that is left at the upper part of the cervix is now dissected up, and this dissection is carried anteriorly for half an inch and posteriorly for more than an inch above the vagina. When the uterus is thus loosened from its attachments, the two edges of mucous membrane are brought together by sutures. The tightening of the sutures has the effect of lifting the uterus upwards and shortening the vaginal portion. Dr. Pallen has operated on three cases. In the first case the patient suffered from intense dyspareunia, slight dysmenorrhœa, and was sterile. The operation cured her of the dyspareunia and dysmenorrhœa, but she has not as yet become pregnant. In the second case the elongated cervix protruded from the vagina and irritated the clitoris, giving rise to hysteria and hyperæsthesia. She also suffered from intense dysmenorrhœa and leucorrhœa. The uterus and cervix measured two inches and nine lines; the vaginal portion alone, one inch and nine lines. The operation was performed in May, 1872, and six months afterwards the cervical portion was of normal size, and her dysmenorrhœa nearly cured. The hysteria and hyperæsthesia had quite ceased.

The third operation was performed for intense dyspareunia and profuse leucorrhœa. These symptoms were quite removed by the operation.

ON THE ETIOLOGY OF PUERPERAL CONVULSIONS, AND THEIR RELATION TO ALBUMINOUS URINE.

Since the attention of the profession was directed to the occurrence of albumen in the urine of persons attacked with puerperal convulsions, and as a natural consequence the urine of such patients more frequently examined, it has been found that in certain cases the albumen only begins to make its appearance after the convulsions have come on. For such cases the theory of Frerichs, that the convulsions are caused by the decomposition of urea retained from disease of the kidney, offers no explanation. Rosenstein has lately offered a more satisfactory explanation of the cause of the convulsions in such cases by applying to them Traube's theory of the causation of uræmic convulsions. His theory is, that uræmic convulsions are caused, not by the presence of ammonia in the blood, but by acute capillary anæmia of the brain. From the constant elimination of albumen through the kidneys the blood becomes watery, the left ventricle of the heart becomes at the

same time hypertrophied, and from these two causes combined we get increased arterial tension, and consequent hyperæmia of the brain. From the watery condition of the blood, hyperæmia of the brain is quickly followed by œdema, and the œdema, by pressure on the vessels, causes acute anæmia and consequent convulsions. The two chief factors, therefore, in the production of the convulsions are a watery condition of the blood and increased arterial tension. Now, both these conditions are present in every labour to a greater or less extent; the blood of all pregnant women being more watery than normal, and the muscular exertion during the pains causing increased arterial tension. If either or both of these factors be more powerful than usual, convulsions may occur. The very watery condition of the blood caused by the constant drain of albumen in cases of Bright's disease, renders women who are the subject of this disease peculiarly liable to be attacked; but this theory also explains the occurrence of convulsions where there is no disease of the kidney (Schroeder's "Midwifery," 4th edition, p. 655).

An interesting paper on this subject has lately been published by Professor Winckel, of Dresden.* From careful examination of nearly 500 cases, together with the statistics of 106 cases published by Meyer in 1853, he concludes that albumen occurs in the urine of 7 per cent. of pregnant women, and in about 25 per cent. of women in labour. He observed that in many cases the urine contained a large quantity of albumen shortly after the pains began, though there had not been a trace of it previously. That this could not be one of the sudden changes often met with in the quantity of albumen excreted in Bright's disease, was proved by its disappearing entirely shortly after delivery. In a large proportion of cases the amount of albumen was greatly increased during the second stage. In some cases albumen appeared in the urine during the second stage, when there had been no albumen during pregnancy or during the first stage. In two cases where the foetus was in a state of maceration when born, the increase in the quantity of albumen during the second stage was most remarkable, being in one case fourfold, and in the other sixteenfold. Winckel thinks that the absorption of some noxious fluid from the dead foetus might possibly be the cause of this large increase in these two cases. Except where there was well marked Bright's disease, the albumen disappeared quickly after delivery; in one-half the

* *Berichte u. Studien a. d. K. Sächs. Entbindungs-Institute. Leipzig, 1874.*

cases there was but a trace; in the other half there was not any twenty-four hours after delivery.

From these facts he concludes that the appearance of albumen in the urine is due not to any organic change in the kidney, but to interference with the circulation. He has seen cases where not only albumen but tube-casts were present immediately after labour, but disappeared entirely in a few days. Albumen was twice as often met with during labour in primiparæ as in multiparæ. This supports the statement that the presence of the albumen is due to interference with the increased arterial tension—i.e., circulation—as also the fact that the percentage of cases requiring operation was double the normal number.

He met with three cases of convulsions out of 1,011 patients. The urine in the first case was not examined before the convulsions set in, but after the second attack it was highly albuminous. She had six attacks after delivery, during which time the urine was full of albumen and tube-casts, which, however, gradually disappeared, and the patient was discharged quite well on the thirteenth day.

In the second case there was no albumen in the urine before labour set in. She was delivered with the forceps during the first attack, and she had six attacks after delivery, during which time her urine was full of albumen and tube-casts. These disappeared in a few days, and she was discharged quite cured on the twelfth day.

In the third case there was a large quantity of albumen in the urine during labour. The patient had only one slight attack of convulsions half an hour after delivery. She was discharged quite well on the twelfth day.

In contrast to these three cases Winckel gives three others, in which, though the symptoms of Bright's disease were most marked (the diagnosis being confirmed in two of them by an autopsy), there was not the slightest symptom of convulsions during labour. He thinks that the prognosis for the mother is improved by the death of the child. This he would explain by the fact, first proved by Schatz (*Archiv f. Gynäkologie*, B. III., p. 122), that the death of the child causes a diminution in the intra-uterine pressure and an increase in the interval between the pains, both of which tend to lessen the arterial tension. The death of the child has also the effect during the course of a tedious labour of lessening the maternal temperature, which Winckel thinks tends to lessen reflex irritability. Another reason is that the amount of distension and

irritation of the maternal soft parts is materially lessened by the death of the child.

The last seven cases of convulsions that have occurred in his practice he has treated with enemata of from 1 to 2 grammes of hydrate of chloral, repeated as often as the fits recurred. Chloroform was used only until the chloral enema was got ready. All these cases recovered. .

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-EIGHTH ANNUAL SESSION.

Saturday, 12th June, 1875.

LOMBE ATTHILL, M.D., President, in the Chair.

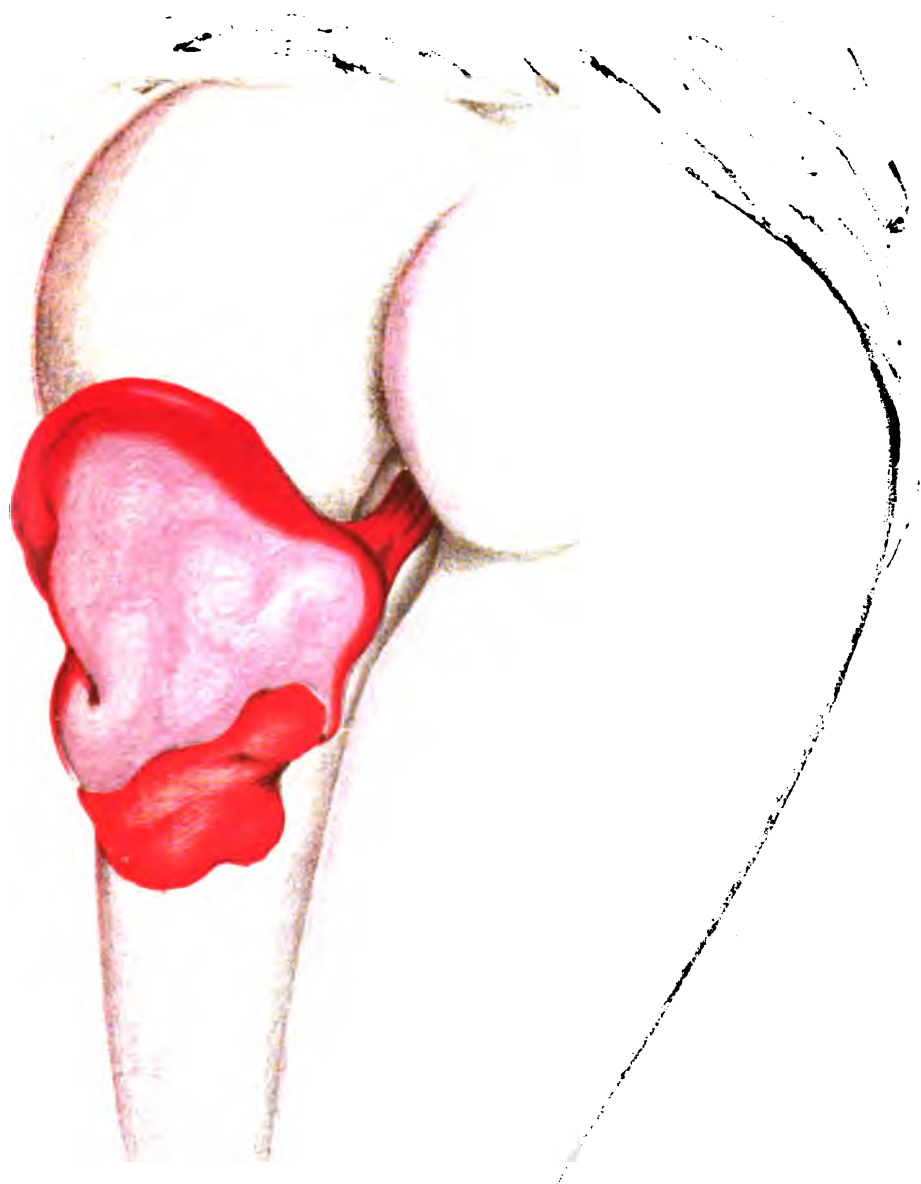
Further Observations on Fibrous Tumours of the Uterus.

By GEORGE H. KIDD, M.D.

ON former occasions I brought before the Obstetrical Society some observations on fibrous tumours of the uterus, founded on cases that had occurred in my own practice, and I now propose to lay before you some further observations on the same subject, suggested by cases that have since come under my notice.

Patients sometimes present themselves with large pendulous tumours protruding from the vulva, which are in reality tumours that were originally intra-uterine, but had been expelled from the uterine cavity, and, after lying for some time in the vagina, passed out through the vulva.

A woman presented herself at the Coombe Hospital on the 20th of June, 1874, with a tumour of this kind, but she was able to return it almost completely into the vagina, and when she applied at the hospital only a portion of it protruded through the vulva, and this portion was ulcerated, and resembled, on a superficial examination, an old prolapsed uterus. She was able to expel the entire mass by voluntary efforts, but found it very difficult to return it, owing to its size. The accompanying drawing shows the tumour as it lay outside the vulva, and also the long pedicle by which it was attached to the inner surface of the anterior wall of the uterus. She stated that she was forty years old, twenty-three years married, and had had five children and three miscarriages. Her youngest child was five-and-a-half years old, and she had not become



DR KIDD - FURTHER OBSERVATIONS ON FIBROUS TUMOURS.

2067 5. John Bale, London: Ed. 1870.

From the original drawing.

pregnant since its birth. Her health had been good until about a year before she applied at the hospital, when she observed a number of clots coming away from the vagina, and, about the same time, a tumour outside the vulva. She said she suffered no further inconvenience till January, 1874, when she again had hæmorrhage. After this menstruation was normal till the following April, when a more or less continuous dark discharge occurred, and she had frequently to have the urine removed by a catheter.

On the 22nd June, I removed the tumour with the ecraseur. Having got her to expel it from the vagina, and having got the drawing made of it, I passed the chain of an ecraseur round it, and divided the pedicle close to its point of attachment.

The tumour weighed $3\frac{1}{4}$ lbs., and measured $7\frac{1}{2}$ inches in its longest axis, and $5\frac{1}{4}$ in its shortest.

The woman left the hospital on the 7th July, quite well, and has remained in good health since.

In another case I had an opportunity of observing the whole progress of one of these tumours; and, as it had many other features of interest, I will relate it at length.

I was asked by Dr. Gordon to see a lady suffering from retention of urine, and on examination I found all the symptoms of a retroverted gravid uterus. The uterus was as large as at the twelfth or fourteenth week of pregnancy. The fundus lay under the promontory of the sacrum, and the cervix pressed against the neck of the bladder, so as to prevent the escape of urine.

My first impression was that the case was one of pregnancy, but the patient, who had had several children, stated menstruation was very regular and rather profuse, and denied the possibility of this. The opinion expressed was that if she were not pregnant, there was a tumour growing in the uterus.

I had an opportunity of seeing this lady from time to time after this. Menstruation became exceedingly profuse, and it became very evident the case was not one of pregnancy. The tumour could be felt in the uterus; it increased in size; the hæmorrhage became very profuse, and on several occasions she was reduced to such a state that her life was in danger, but she would not consent to have the tumour removed. At length the hæmorrhage lessened very considerably, and her general health improved, but in July profuse bleeding again occurred, accompanied by expulsive pains, and when I visited her I found the tumour lying in the vagina, but attached to the inner surface of the uterus by a long, broad pedicle. Assisted by Dr. Gordon and Dr. Joseph Johnston, I drew it down out of the vagina, and removed it with the ecraseur. When removed it weighed 2 lbs. 13 ozs. The lady has since been restored to perfect health.

These are examples of the so-called sarcomatous tumours. They are fibroids of a loose texture, or fibro-cystic tumours.

The occurrence of retention of urine from retroversion of the uterus, as in this latter case, is rather a rare accident. It occurred several times, till the tumour grew so large as to prevent its falling under the promontory of the sacrum. This form of retention is, of course, to be distinguished from the form I have given instances of in some of my other communications, where the tumour lay in the true pelvis, and pressed directly against the urethra or neck of the bladder. After passing a catheter and emptying the bladder, the uterus was easily put into its proper position.

The next case I have to lay before you is one illustrating the recurrence of a fibroid growth. I have in this jar a tumour I exhibited before. It grew from the posterior wall of the uterus, and you can see the broad, rough surface by which it was attached. After the tumour was removed the patient remained in good health for nearly a year, and then the hæmorrhage returned, and the uterus enlarged. Two years ago she again entered the hospital, and I removed the mass you see in this other jar. You observe it consists of eight portions; it was originally one tumour, but in removing it I could only get it away piece by piece, the operation occupying nearly two hours. The patient recovered without a bad symptom, and has remained quite well since. In a case I brought before the Society many years ago I had to operate four times, at intervals more or less prolonged, and removed twenty-nine small polypoid tumours, but these were new tumours—not a recurrence or re-growth of old ones, as seemed to be the case in the present instance. I may here mention that the young woman from whom these twenty-nine tumours were removed is now in good health, and though the uterus is large, menstruation is normal, and there is no hæmorrhage or other discharge, and she is actively engaged in her occupation as a visiting governess.

This method of taking away the tumour piece by piece, where it cannot all be included in the loop of the ecraseur, is one I have adopted in several cases, especially where there was not sufficient dilatation of the os and cervix to afford room for the necessary manipulation, and I think it worthy of a passing notice.

The next case I have to describe illustrates the practicability and advantage of introducing a large number of sea-tangle tents.

Mrs. H., admitted into the Coombe Hospital 17th June, 1874, aged fifty-four; married twenty-four years; never pregnant. For the last three years menstruation has been very profuse, accompanied by bearing-down pains, and lasting upwards of ten days, the discharge coming away in clots. During the intervals of menstruation she has a constant serous discharge; she is much weakened, has an anæmic appearance, and is unable to attend to her ordinary duties.

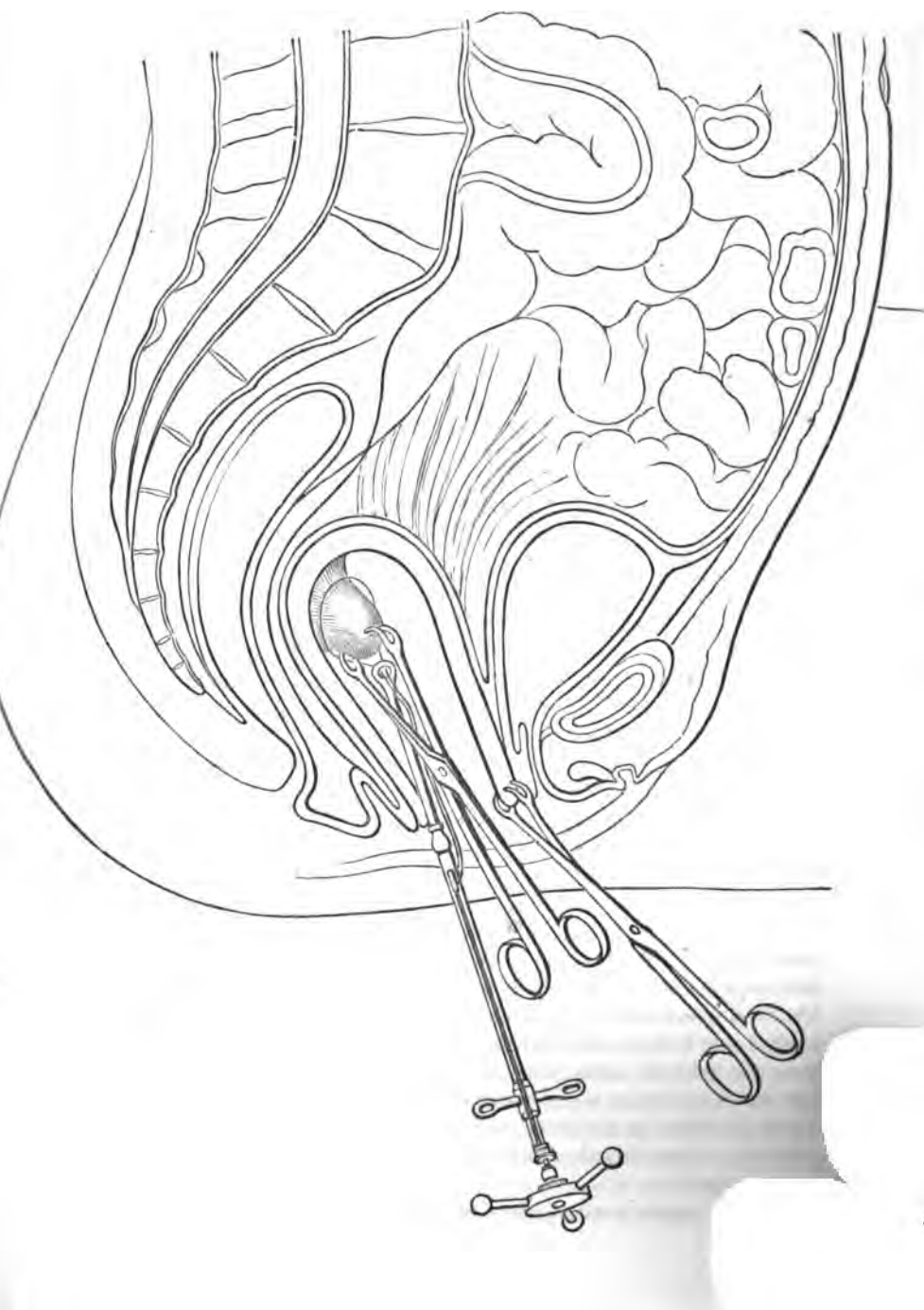
On examination a tumour could be felt deep in the hypogastrium, and rising an inch above the pubes. On bi-manual examination this proved to be the uterus, with its body enlarged and antiflexed. The os was small, but soft and dilatable, and the sound passed in easily. The cavity measured $8\frac{1}{2}$ to 4 inches. There was no bulging-out of the anterior wall.

On the 24th June twelve pieces of sea-tangle were introduced, each about four inches long and of the size of a No. 6 catheter. The following day these were removed, and a tumour was at once seen lying in the cavity of the uterus, and on passing in a finger this tumour was found to be growing from the anterior wall close to the fundus. The loop of a steel wire attached to an ecraseur was passed round the neck of the tumour, but on tightening the screw the wire broke. Another loop was now applied and the tumour was removed. It weighed $4\frac{1}{4}$ ozs., and measured in its longest circumference $8\frac{1}{2}$ inches, and in its shortest 6 inches. On the 15th July the cavity of the uterus measured 3 inches, and there was no discharge of any kind. On the 18th July she left the hospital, and on 1st October I received a letter from Dr. M'Donnell, of Randalstown, who had sent her up to have the tumour removed, in which he says—"Mrs. H. continues well. She has now her third menstrual period over, and has not been so well for many years. The discharge on the last occasion was about natural, and, better still, free from pain, and you have heard from herself how she suffered at these times, before the operation."

Now, as to the operation by which these tumours were removed. It was described by me in a paper read before this Society in 1868, and I have laid some copies of that paper on the table, as a diagram is given in it of the operation, and I wish on this occasion to allude specially to two points in regard to it. I believe that the operation is one that was first devised and described by myself. The hint was taken from Simpson and Marion Sims, but they do not describe the operation as practised by me. Sims suggests in his book the use of the sea-tangle originally proposed by Dr. Sloan, but he does not describe the operation, nor does he seem to have practised it. The operation consists of two stages, to both of which I wish to draw particular attention. In the first place, it is necessary to dilate the os uteri, and for this purpose I have been in the habit of using sea-tangle tents. One object of my paper in 1868 was to show the advantage of sea-tangle over sponge, which was originally suggested by Sir James Simpson. My method is to introduce a number of pieces of sea-tangle, and I believe it is of the utmost importance, where the tumour is large, to introduce a sufficient number of sea-tangles in order to get enough room to get at the tumour.

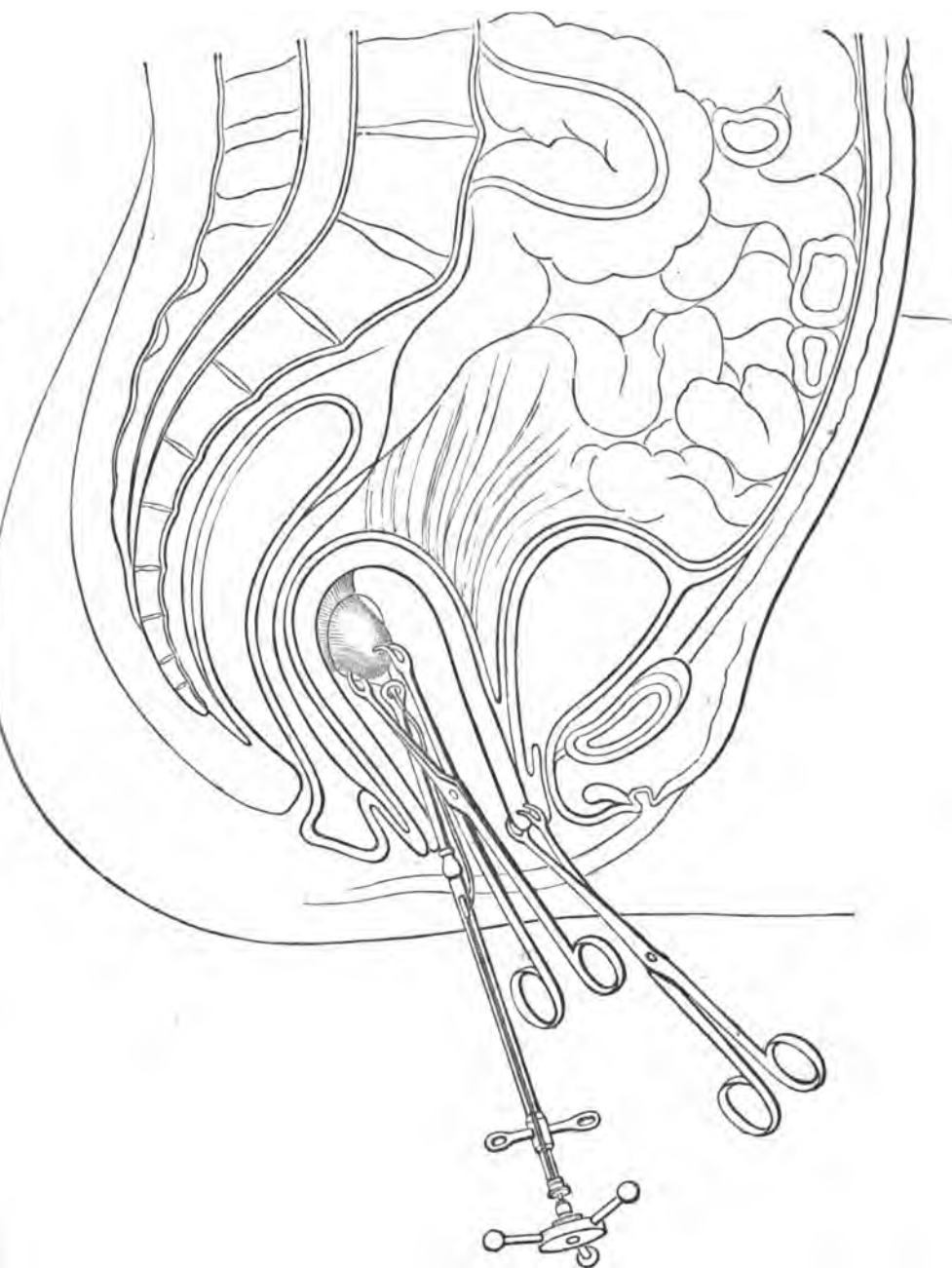
In the case I have just read it is stated I introduced twelve pieces of sea-tangle, about the size of a No. 6 catheter. When this can be done at a first sitting it is of great importance, but when it cannot be done

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without force it is desirable to introduce as many as possible, and subsequently to remove these and introduce a further number. In some cases where a certain amount of dilatation has been made, I have endeavoured to increase it by the Indian-rubber bags of Dr. Barnes, but I am quite sure one of the most important points in the operation is to secure plenty of room, and the most efficient mode is to introduce a sufficiently large number of the sea-tangle tents. It has been suggested by Dr. Joseph Johnston, of the Hospital for Soldiers' Wives, to introduce medicated sponge tents, after the sea-tangle has prepared the way, and it may be an improvement. I have not tried it, but I think if you can produce a certain dilatation by sea-tangle in the first instance, and then follow it up by sponge tents, it may be a great improvement. Having obtained complete dilatation of the uterus, the next point is to get the *ecraseur* round the tumour, as shown in the plate in my paper of 1868.* I reproduce that diagram here. The tumour shown is a small one, but the same method applies to larger ones. The *ecraseur* is shown about to be pushed home to the root of the pedicle. The anterior lip is to be seized, and the whole body of the uterus drawn down. Then the tumour is seized with a second *vulsellum*. I think it is of great importance to use the second *vulsellum* merely as a guide to the tumour, and to steady it. If you make great traction with the second *vulsellum*, I believe you run the risk of inverting the uterus, and, perhaps, of removing a portion of it with the tumour. You then pass the wire of the *ecraseur* over the handle of the second *vulsellum*. This is a distinct part of the operation. If you have sufficient room, you may, with great ease if the tumour project into the uterus, pass the wire round the tumour, and once you can get the wire round it, you need not be very anxious to get it up to the base of the tumour, for if the eye of the *ecraseur* be well applied to the neck of the tumour, the wire will slip into its place as it is tightened. Once you have the wire secured round the tumour the other step of the operation is easy. If the tumour is large, the wire may break, but you must adapt another, and persevere. The great point is to have sufficient room to manipulate. When I read my paper in 1868 I mentioned that I was in the habit of using a soft iron wire in this operation. Subsequent experience has induced me to use instead a steel wire, a piano wire being the best suited for the purpose. It was a paper of Dr. Barnes that suggested this to me; a paper in which he described the operation of dividing the head of the fœtus in a narrow pelvis, and his reasons are equally applicable to this operation. The wire is compressed as you introduce it, but the moment it gets into the dilated part of the uterus the elasticity of the steel causes it to expand, and thus it is more easily applied.

. * See Dublin Quarterly Journal of Medical Science, February, 1869.



As to the results of the operation, I may state as a fact, that in no case in which the whole tumour has been removed have I seen any unpleasant effect from the operation. In several cases in which only a portion of the tumour was removed the results have been fatal. Whether that was the result of excessive manipulation in trying to get out the tumour or any other cause I cannot say. In the case already mentioned, of which the preparation is shown in this jar, I was two hours in removing the tumour, and eight pieces were removed. The patient recovered without a bad symptom. In all these cases I have been in the habit of touching the inner surface of the uterus with strong nitric acid, with the idea of checking the re-growth of the tumour, and of preventing pyæmic symptoms setting in, and I still do so, applying it freely to the whole surface, and, of course, to the portion from which the tumour was cut. I have never seen any injurious results from doing this, and I believe it causes the uterus to contract, prevents the absorption of unhealthy discharges, and is very useful. I believe the first time nitric acid was ever applied to the interior of the uterus was in the case operated on by me on the 11th July, 1868. This is the case already referred to where twenty-nine tumours were removed. It was used at the suggestion of my colleague, Dr. Ringland.

The **PRESIDENT**: Dr. Kidd deserves much credit for introducing this operation. He was the first to introduce the system of dilating the uterus by introducing a number of sea-tangle tents at one time. Experience has proved to us that it is not the number of tents used that renders the operation dangerous but the undue prolongation of the manipulations. My own experience coincides with Dr. Kidd's, that where you are able to finish the operation in a short time all has gone well. In three cases in which I failed to remove intra-uterine tumours death followed, yet in none of my cases did the process of dilating the uterus extend over more than twenty-four hours. If at the end of twelve hours sufficient dilatation is not produced, I remove the lengths already in the uterus, and introduce a larger number of fresh pieces of sea-tangle in their places. With respect to the operation itself, it was described by Dr. Kidd seven years ago, and I believe his operation has not been improved on since; nor do I believe it can be improved. The steel wire possesses a great advantage over the chain or wire cable; to the latter I object entirely. If a strand breaks, as is frequently the case, it is liable to inflict injury, or to render the instrument useless. A soft iron wire is more easily manipulated than the steel wire, but on the whole the latter is decidedly preferable. I dislike sponge tents; they produce a very offensive discharge, and not unfrequently injure the mucous membrane of the cervix, which sinks into the pores of the sponge as it swells, which is consequently lacerated as the tent is withdrawn. It

is no novelty for the Society to hear of the application of nitric acid to the interior of the uterus. Dr. Kidd was the first person who so applied it, and the results were so satisfactory that I adopted the practice, and have ever since advocated its use.

DR. THOMAS MORE MADDEN said he had seen a case which strikingly confirmed Dr. Kidd's view, that the danger in these cases arose not so much from manipulation as from leaving a portion of the tumour behind. He had seen a considerable number of cases in which uterine polypi were removed, but the only one that proved fatal was one in which there was a large fibroid tumour, and which he saw along with Dr. Byrne and Dr. M'Clintock. They cut the tumour across, and removed about half, but did not succeed in removing the entire tumour, and the woman died. The operation was not nearly as long, and the woman did not suffer so much manipulation as in other cases, where the tumour was completely removed and the patients made a good recovery; so that in these cases he thought they should not be afraid of handling the uterus even roughly, but the operation should be completed if once undertaken.

DR. J. A. BYRNE could fully corroborate Dr. Madden's statement. The case referred to was the only one in which he had seen bad results follow from an attempt to extract an uterine tumour. There were three operations in that case; the great difficulty was to fix the noose over the tumour, and on the last occasion the patient was so much prostrated that it was thought necessary to postpone further operation, and the lady died. He could fully endorse Dr. Kidd's statement, that the patient will bear a surprising amount of dilatation and chloroformisation, if the tumour be entirely removed, but if any portion were left behind, it gave rise to symptoms that caused unfavourable results.

DR. DENHAM had seen a great number of these tumours, and he thought the result of the operation depended as much on the state of health or peculiar constitution of the patient as upon the handling by the operator or the nature of the tumour. When he went into the Lying-in Hospital as master he saw a case which had been there previously under the care of Dr. M'Clintock. There was a large fibrous tumour occupying the entire uterus. During Dr. M'Clintock's mastership he had removed very large portions of this tumour, and with decided advantage to the patient. She was occupied in a millinery establishment, where she had to stand during a great portion of the day; the tumour grew again, and during the first year of his mastership she presented herself at the hospital suffering from extreme exhaustion. The tumour was very large, and he removed it by means of the vulsellum and common scalpel, removing slice after slice as if it were a turnip. No constitutional disturbance followed

this operation. On the contrary, her health improved, and she went out better. She came again under his observation suffering from a severe rheumatic affection; the tumour was enlarged, and she appeared like a woman in the first stage of labour. He made a crucial incision through the os, with the object of enabling him to draw the tumour down. That simple operation was followed by pyæmia, and she died with all the symptoms of diffuse inflammation. On the former occasions she underwent severe manipulation, and no bad consequences ensued. So that they must be careful to distinguish between the health of the individual at the time and the actual amount of injury inflicted on the patient by manipulation. At one time an individual would bear an amount of manipulation which at another would prove fatal. In another case which came under his observation the wife of a clergyman was, by repeated hæmorrhages, brought to the last stage of exhaustion. The os was dilated with sea tangle for a considerable time, and a portion of the tumour removed, but she was so exhausted that it was not considered justifiable to continue the operation. Nitric acid was then applied to the uterus. After some time she rallied, and the remarkable fact was that the tumour seemed to have entirely disappeared. These cases were of deep importance to the obstetrician, and they had yet a good deal to learn respecting them. There was one point on which he was inclined to differ with Dr. Kidd. He said that in seizing the tumour with the second vulsellum the object was to steady the tumour, and that by making traction there was a danger of inverting the uterus. Now, he thought that by drawing down the tumour with the second vulsellum they brought the tumour into a better position for getting the wire over it, and brought the base of the tumour nearer to the fingers. Having got the wire over it, they should then allow the tumour to resume its natural position, and then tighten the wire. This, however, was a mere practical point of detail. In the President's recent valuable work he had made allusion to this operation, and gave a diagram of it, which was precisely similar to that given by Dr. Kidd, who he believed deserved the credit of having been the first to introduce the operation, but that did not clearly appear in the President's work. He (Dr. Denham) had seen many of those cases; and he approached them every day with more and more diffidence as to the result of the operation. Where a young female had been broken down by disease, or where there was a constitutional tendency to disease, they should be guarded as to prognosis. He saw a patient not long ago where this operation was attempted, and a portion of the tumour removed, but the patient gradually sank, and died in twenty-four hours, to the great distress of the family, for the result was not anticipated.

The PRESIDENT said: I wish to say a few words relative to the description of the operation for removing intra-uterine tumour given in my work on the Diseases of Women referred to by Dr. Denham. Nothing could be further from my intention than to claim the operation as mine, and I am surprised that such could possibly be inferred. I speak of dilating the cervix, which is the first stage of the operation, by means of several pieces of sea tangle, introduced at the same time, as Dr. Kidd's method. Describing the second stage of the operation I attribute to Dr. Kidd the introduction of the use of the steel wire, and then refer to him as being the person who first applied nitric acid to the interior of the uterus, at the conclusion of it, thus identifying him with every stage of the operation. If I have not been sufficiently explicit, I regret it; and should my work reach a fourth edition, I shall take care to remove the possibility of doubt or of being misunderstood. As to the removal of the vulsellum, which holds the lip of the uterus after the tumour itself had been seized, I differ from Dr. Kidd to this extent, that if the vagina be very narrow, as it was in the case described in the lecture referred to, I believe it to be a wise proceeding, but if the vagina be relaxed, or the tumour very soft, it may be unnecessary or even unadvisable to do so.

DR. J. A. BYRNE said he met with a remarkable circumstance that day which he thought worth mentioning. Some few years ago he removed a fibroid tumour from the uterus of a young woman, and that day she came to him labouring under a very large fibroid enchondromatous tumour of the jaw. It commenced to grow after the removal of the uterine tumour. This connexion between enchondromata and fibroid tumour of the uterus was not a solitary instance; it had been observed before, and he should like to know from Dr. Kidd and other members of the Society, who had had large experience, whether they had noticed any such cases.

DR. JOSEPH JOHNSTON said he had introduced the use of the medicated sponge tents with the view of effecting mere rapid dilatation. He first introduced the sea tangle, and then when a certain amount of dilatation had been effected he replaced the tangle with a sponge tent, and by that means got a considerable amount of dilatation in a short time. There was, however, certainly a great disadvantage in using the sponge tent. He never was so much struck with this as when using the sponge in an operation for vesico-vaginal fistula. Every time the sponge was put in, for the purpose of wiping the surface, the woman would cry out—"It is the furze you are using." He never used anything but carbolised sponge tents.

DR. GEORGE JOHNSTON.—With regard to the sea-tangle tents I should like to ask Dr. Kidd has he ever found any feverish consequences

resulting from the introduction of sea tangle; for in our practice in the Rotunda Hospital we have had serious consequences resulting from the introduction of a No. 6 tangle tent. I never can forget one case that left an indelible impression on me. A fine healthy young woman came into hospital suffering from a fibroid tumour of the uterus. I thought it necessary to introduce the sea-tangle tents. I do not think we introduced more than two tents of No. 6 in size. In six hours she complained of pain, and they were withdrawn, and in six or seven hours metritis set in, and she died. That was not the only case in which we have found bad symptoms arising from the sea-tangle tents, and I flatter myself we introduce them as carefully as other practitioners. A short time ago I had a private case, where the lady could not bear the tangle tent for an hour. As to the removal of the tumour in one sitting, we had a case where it was necessary to have three sittings before we could remove it. On each occasion we removed two or three ounces, and the operations occupied more than a week, yet the patient went on well and perfectly recovered. During the operation we used Condyl's fluid to prevent any danger of septicæmia.

DR. FINUCANE said when he was attached to the Coombe Hospital a poor woman was admitted, who came from Manchester, under the impression that she had disease of the womb, but who really had a large stone in the bladder. The method of dilatation adopted was this. Some bees-wax was melted and the base of the sponge placed in it. The sponge was then introduced, and on the melting of the wax the sponge expanded, and in this way the dilatation was accomplished so completely that Dr. Sawyer was enabled to take away a stone as large as a turkey's egg.

DR. GEORGE JOHNSTON.—With respect to the removal of a fibroid tumour of the uterus being followed by enchondroma of the jaw, I may mention that I had a case in which I removed a polypus from the fundus of the uterus, and the woman went on very well until six or eight months ago, when she got a tumour in the breast, and is now in Steevens' Hospital for the purpose of undergoing an operation.

DR. KIDD.—With regard to the supposed connexion between fibroids of the uterus and fibroid tumours growing in the parotid gland or in the breast, I think before we can be in a position to discuss that question we should have some histological evidence of the nature of the tumours, for the prevailing opinion in the present day is that uterine fibroids are developments of the non-striated fibres that compose the uterus, whereas we are not aware of any non-striated fibres in either the parotid or the mammary gland. We should not confuse our ideas of pathology by analogies which are not fully worked out. Dr. George Johnston has spoken of irritation arising from the use of sea-tangle. I have seen it,

and I have also seen irritation arising from sponge-tents. I have seen two fatal results from sea-tangle—one in my own practice, and the other in the practice of a friend—and I always regard the dilatation of the uterus by sea-tangle as the most serious portion of the operation, and the portion that is to be most anxiously watched. I never introduce sea-tangle that I do not watch my patient most closely, and I am prepared to withdraw it on the least symptom of irritation. But few weeks pass by that I do not introduce sea-tangle tents, most frequently for the purpose of getting at a diseased mucous membrane, in order to treat it, and frequently for the purpose of ascertaining if a tumour is in the uterus; but the fatal results I have seen are limited to the two cases I have mentioned—one in my own, and the other in the practice of a friend. In the latter case the uterus had been so fully dilated some months previously that we were enabled to get our fingers into it, and it was then decided to postpone the operation, and some months were allowed to go over before we attempted it again. Then a few tents were introduced, and symptoms soon set in which induced us to withdraw them, but the patient died. That very instance is an example of what Dr. Denham has spoken of, that it is the peculiar constitution of the patient that causes this irritation to arise. It is not the amount of dilatation, but the unhealthy condition of the patient at the time, that causes the unfavourable result. I think that that stage of the operation, however, ought to be got over as quickly as we can, and the suggestion of Dr. Joseph Johnston as to the use of a medicated sponge appears to me a valuable one, and very probably on the first suitable occasion that offers I shall adopt it. An objection to the use of the sponge only is that you have to introduce it time after time before you get the uterus dilated, and you have the os externum dilated a long time before you can effect dilatation of the os internum; but by first introducing the tangle you can afterwards introduce the sponge with good effect, and when the sponge is medicated, either by carbolic acid or some other preparation, you do away with another great objection to it—that is the foetid discharge. As to the slipping of the vulsellum, if one be used such as I have described, it will not slip. Dr. Denham has spoken of inverting the uterus. I believe there is not much difference between us; he suggests the drawing down of the tumour so as to get the wire round it. I do not object to that, but I do object to dragging down the uterus and keeping it down by means of the vulsellum attached to the tumour, as I believe you thereby run the risk of partially inverting the uterus, and even of removing a portion of it. The *ecraseur*, as Marion Sims says, is a very greedy instrument; it has a great tendency to drag tissues into its grasp that ought not to be in its grasp, and Dr. Sims describes very graphically a case in which, in amputating the cervix of the uterus, the

cavity of the peritoneum was opened, but he at once closed it by sutures, and the patient recovered. I believe that when you are operating on a tumour of the uterus or on the cervix the less you draw the uterus down the better. I cannot pass over the remarks the President has made. I am quite sure, sir, there was no intention on your part to deprive me of any of the credit of this operation; the operation, as far as I know, is entirely my own. It is described in your book, and the description given there is nearly the same as in my own paper, but by an unfortunate oversight it is so described that many have thought it originated with yourself. You have, sir, too frequently, in your book and in many other instances, spoken favourably of me, to permit me to entertain the idea that you wished to deprive me of the credit of the operation. At the same time I am glad the matter has been spoken of, for if there is any credit or discredit due for the operation, I wish myself to bear the responsibility of it.

DR. WARREN, House-Surgeon in Steevens' Hospital, said that the case alluded to by Dr. George Johnston of a tumour of the breast had been operated on and the tumour found to be of a decidedly malignant nature.

DR. M'CLINTOCK.—It is known that we are about to lose from this city a most distinguished physician, and one of the most eminent members of the obstetric profession. I need hardly say that I allude to Dr. Churchill, an original member of this Society, and one who has always shown himself its steady friend and supporter. He is known to us all personally, and I can say nothing that could increase the estimation in which he is held amongst us. We have all had occasion, at one time or another, to seek his aid and assistance in difficult and anxious cases, and I believe every one will be ready to say that in his relations with his professional brethren and the public Dr. Churchill has always acted up to the highest standard of professional conduct. Had he done nothing else to win our respect, this feature in his character would alone entitle him to it. I am sure I only express the feeling of every one present when I say I sincerely regret Dr. Churchill has resolved on giving up practice, and going to reside at a distance in the country. I think we should be wanting in respect for ourselves were we to allow such a distinguished member of our body to go away without offering him some mark of the high esteem in which he is held by those who had the best opportunity of knowing him, and I therefore move that the Council of the Society be requested to draw up a suitable address to Dr. Churchill on his retirement from practice, and his departure from Dublin.

The motion was seconded by Dr. George Johnston, and adopted amid applause.

Saturday, 10th July, 1876.

ADDRESS TO DR. CHURCHILL.

DR. KIDD said: I have been entrusted with the duty of moving a resolution carrying out the wishes of the Society, expressed at its last meeting. On that occasion it was moved by Dr. M'Clintock and seconded by Dr. Johnston that the Council be requested to prepare an address to be presented to Dr. Churchill on the occasion of his retiring from practice. The Council held a special meeting for that purpose, and the following is the address that was agreed to on that occasion:—

“To FLEETWOOD CHURCHILL, Esq., M.D., Ex-President and Member of Council, Dublin Obstetrical Society.

“DEAR SIR,—We, the Council and Members of the Dublin Obstetrical Society, having heard with much regret of your retirement from professional life and departure from Dublin, desire to express our sense of the great loss we all shall sustain by your removal from amongst us.

“We feel that this loss is not merely confined to the sphere of our Society, with which you have been intimately connected since its formation, but extends also to that of private practice, where your wise counsel, your great experience, and, above all, your high standard of medical ethics, were universally recognised and appreciated.

“Most sincerely do we hope that you may long be spared to your social circle and numerous friends, and may now enjoy that repose and uninterrupted domestic happiness which you have so well earned by a lengthened career, not less distinguished for the conscientious discharge of every professional obligation, than for the successful cultivation of all the branches of obstetric science, and for the promotion of every useful and philanthropic work that came within your reach.

“We beg to assure you that, wherever you may go, you shall carry with you the respect and warm regards of every member of our Society, and our best wishes for your health and happiness.”

The resolution I have been asked to move is that the address now read be adopted, and that the Secretary be instructed to have it properly engrossed and signed on behalf of the Society by the President, the Vice-Presidents, and the Secretary, and forwarded to Dr. Churchill with as little delay as possible. It is quite unnecessary that I should say anything in support of this resolution. I feel that the address which has been drawn up by the Council expresses most truly the feelings of every member of this Society. For my own part I must say I endorse its every word most cordially, and I am quite sure that every member of this Society feels that in the departure of Dr. Churchill we have not only lost

a valued friend, personally and socially, but one whom we all looked up to and esteemed as a great professional light; one who has conferred great benefits on our branch of the profession, and whose name is known all the world over, and will be known as long as medical science is cultivated.

DR. DARBY.—I have been unexpectedly called on to second the resolution, and I do so with all my heart. There could not be a more proper address prepared than that which has been read to you; and I wish to express my entire concurrence in everything which has been said about Dr. Churchill. Having known him in his earlier years, I may mention that his indefatigable industry and research in the promotion of obstetric science was one of the most remarkable features of his professional career.

The PRESIDENT said he should not put the question to the vote, but ask the meeting to pass it by acclamation. There was not a member present who did not cordially re-echo every word in that address. Dr. Churchill, irrespective of his great professional merits, was not only respected and esteemed by his professional brethren, but he might also say beloved by them, and every member of that Society felt the greatest regret at his retirement from amongst them.

The PRESIDENT then put the resolution, which was carried by acclamation.

CLINICAL RECORDS.

Notes from the Wards of the Cork Hospitals. Communicated by MR. MARTIN HOWARD.

NORTH INFIRMARY.—*Case of Extensive Burn.* Under the care of NATHANIEL J. HOBART, M.D., M.R.C.S.E.; Surgeon to the Infirmary. *With some Remarks upon the General Treatment of Burns and Scalds in the Infirmary.* By MR. HOWARD.

JOHN D., aged twenty, was admitted into the North Infirmary on Monday, 5th July, 1875. While under the influence of drink he had strayed into a lime-kiln, where there also happened to be salt-pans, into one of which he fell. When admitted the patient was suffering from great nervous depression, with prolonged fits of shivering. From the inferior angle of the scapula down along to and including the gluteal region on both sides, was burnt. Also both upper extremities, from the tips of the fingers to the elbow-joints, and all round the insteps, and ankles of the two legs. Large fœtid sloughs were hanging from the burnt surfaces, and when these were removed it looked as if the cutis vera had been altogether destroyed. In some places, particularly about the wrists and fingers, vesications had formed. Sheets of cotton wadding, opened out so as to have the burnt parts covered with the soft side, were applied, and lightly bandaged. Opium draughts were ordered every six hours till sleep was procured, and brandy and water and beef-tea at intervals. He passed an extremely restless night. He got out of bed several times, and had a sort of low muttering delirium, but whether this was due to the effects of drink or not it is difficult to say. Next day he was somewhat quieter, but vomiting set in in the morning, and he was put upon the mist. cit. potass., a half-grain suppository of morphia being ordered at night. On the second day a high irritative fever came on, the skin being very hot and dry, the pulse rapid, and the temperature 100·8°. A diaphoretic mixture was prescribed and a half-grain suppository of acet. morphicæ ordered at once, which was to be repeated at night. The amount of stimulants was increased. On the fourth day, an offensive smell arising, the dressing was cautiously removed from such places as had saturated the wadding, and dry wadding applied the moment the old dressing was taken off. No attempt was made to tear away the wadding where it could not easily be removed. All vesications were opened. The suppositories and

mixture were continued, and the symptoms had considerably abated in severity.

On the 6th day the dressing was again removed, and very little difficulty was found in the process. Healthy pus had begun to form on the burnt surfaces, and the smell was not very offensive. Strips of lint were then well saturated with a mixture of equal parts of olive-oil and lime-water (Lin. calcis), and applied over the burnt parts. This dressing was removed every second day regularly, and continued up to the 15th, on which date general granulation began to appear. The fever had by this time entirely subsided, and the patient's appearance was greatly improved.

On the 15th the burnt surfaces were dressed with the following excellent preparation, called "Bullen's Ointment" (Mr. Bullen, a former surgeon of the Infirmary, being the first to introduce it), was ordered to be spread on lint:—

R.—Acet. plumbi, ʒi.

Ung. resinæ, ʒss.

Adipis, ʒvii. m.

Fiat ung.

This dressing was used every second day, and was the only other dressing employed. The exuberant granulations were checked when necessary by sulphate of copper, the healing process was rapid and uniform, and now (August 31st), with the exception of a small patch on one hand and leg, all the burnt surfaces are well.

I have taken advantage of my notes of the above case to make a few remarks upon the general treatment of burns and scalds in the North Infirmary, Cork, basing my remarks upon purely personal observations during nearly eighteen months' residence in this institution, where, at the very lowest calculation, I have seen and watched close on a hundred cases of such injuries, varying from the first to the last degree of their classification. Whether any apology for such a step is necessary I know not, but I scarcely think any man is expected to offer an apology for simply describing what he has himself witnessed. "*Ars medica est tota in observationibus*," says Baglivi, and, in my opinion, it matters little what the professional *locus standi* of the observer may be, provided science will derive the smallest possible assistance from the publication of the results of his or her observations. Others may think differently—indeed, it is a lamentable fact that now-a-days many do think differently—but it is an incontrovertible truth that while such a feeling prevails much valuable information must necessarily be lost to science.

We might divide the different remedies recommended in the treatment of burns and scalds into two classes—namely, cooling or refrigerant, and calefacient or stimulating. Legion as are their names, I think we may

very fairly conclude that all may be brought under one or other of these two headings. Earle appears to have been one of the greatest supporters of the cooling or refrigerant plan, cold water or even ice, pounded and applied on clothes or in a bladder, being highly recommended.

Some cases where cold produced immediate relief have come within the field of my observation, and have been noted down. All these cases, however, were of the first degree, arising from hot vapour, hot fluids, contact with hot bodies, which caused an erysipelatous redness of the skin and the most violent pain. A gentleman going to bed took up a poker in his hand to stir the fire in his bedroom, but the servant had only just removed the poker out of the fire, in which it had been bodily plunged, and it burnt his fingers, the pain being agonising. He immediately dipped his hand into the washing basin of water, and instantaneous relief was afforded. When the pain had subsided he went into bed, but it returned again with great violence, and then he so arranged the basin next the bed that he could fall asleep with his hand immersed in the water. The pain did not occur during the rest of the night, and in the morning all trace of the burn had disappeared.

While in a house one evening a cup of hot tea was accidentally upset over a child's hand, the pain being so terrific as to keep the child constantly screaming. I directed the child to be put to bed, and the basin plan adopted, and in a short while the child ceased screaming and went off to sleep.

In burns and scalds of the first degree, therefore, cold is decidedly efficacious. Compare with the examples given above Hunter's observations. He says:—"Cold lessens all inflammations, and is a very good application where it can be applied, but it cannot be applied so universally as others. However, cold has this disadvantage, that the pain, although removed while under the application, occurs with double force when it is removed, much more than from any of the applications; and the reason is evident, for, as the warmth returns, the pain is increased by the warmth, even in sound parts."

In point of fact, cold is of no use whatever in the treatment of burns and scalds unless the diminished temperature be steadily maintained; and as in burns and scalds of even the second degree, especially when the injury extends to the chest or trunk, and the patient is of a delicate constitution, this cooling plan of treatment cannot be employed for the desired length of time without great risk of producing dangerous constitutional disturbance; it is only in cases of the first degree that such a method ought to be had recourse to, and under circumstances where measures, presently to be described, are not practicable.

With regard to the calefacient or stimulating plan, it seems to be that the dispute is not at all about the principle, but about the class of remedy to be applied.

Kentish strongly advocated the warmest and most stimulating remedies possible on the grounds "that any part of the system having its action increased to a very high degree must continue to be excited, though in a less degree, either by the stimulus which caused the increased action, or some other having the nearest similarity to it, until, by degrees, the extraordinary action subsides into the healthy action of the part." Hence, he declares holding the part to the fire to be the best mode of relief; but as, of course, occasions arise where this cannot be done, the most stimulant applications possible are recommended. Awhile ago, in speaking of cold, we had to object to it on the score of having to keep up a diminished temperature for so long a time as may be productive of injurious results, and now we certainly must object to such a constant increased temperature, which, though more feasible than a constant low temperature, is as apt to produce equally deleterious effects upon the constitution. This is an exemplification of the well-known line—

"Incidit in Scyllam cupiens vitare Charybdim"—

and we accordingly find several modifications for obtaining by safer and milder means the very end Kentish had in view. Over-stimulation appears to be the evil that was dreaded by the plan of treatment Kentish laid down, and those who look favourably upon the treatment of burns and scalds by stimulation have endeavoured, each in their own way, to counteract and moderate the remedies Kentish recommended. Mr. Eghorn, an Edinburgh brewer, whose attention was attracted to the subject by the frequency of such accidents among his own workmen, used to apply vinegar in burns of the first degree, and in those of the second and other degrees a poultice after the vinegar, then powdered chalk to take away all appearance of moisture from the sore, and then again a poultice. Baron Larrey recommends dressing all deep burns with saffron ointment. Ward and Marshall both strongly advocated the employment of flour, the *modus operandi* being thus explained by Ward:—"By its instantaneous operation as an absorbent powder in allaying the irritation, and partly by its coldness in diminishing the temperature of the inflamed parts, it immediately arrests the rapid progress of the inflammation, and forms a fit medium or covering to prevent the access of the atmospheric air to a part of the body which is at all times peculiarly susceptible of its action (especially upon a large and extended surface of it), but which is now rendered a thousand times more susceptible than before." Hunter also speaks of flour as "the very best for burns or scalds," but not until all the inflammation has been prevented or subdued. Cotton wadding has been very highly extolled by American writers in the treatment of burns and scalds, and the experience of the staff of the North Infirmary, extending over a large number of years, goes to prove that, as a first dressing, it is in every

respect preferable to any of the practices above described. The rapidity with which flour excludes the air (now almost universally admitted a precautionary measure of the greatest importance), and the readiness with which it absorbs the discharge, are certainly strong recommendations in its favour, but producing scabs, particularly over a large surface of the body, is neither a pleasing nor agreeable way of bringing about a cure. Cotton wadding excludes the air with just as much rapidity, absorbs the discharge in a way that removes it altogether from contact with the raw surface, and lays a foundation for the employment of remedies, presently to be mentioned, which bring on the healing process in an equally, if not in a more, efficacious manner than the scabbing process, or, any other of the processes in vogue, while for simplicity, comfort, warmth, and easiness of application, it stands unrivalled. When a burn or scald of the first degree presents itself at the North Infirmary, the practice is to apply cotton wadding directly, taking care to envelop the entire of the burnt surface, and to retain it firmly over the parts by a bandage. Should there be any vesications, they are always punctured previous to applying the wadding, and the first dressing is not disturbed for a period varying according to the nature of the injury and the feeling of the part from three days to a week. In light cases I have seen the first dressing effect a cure, and in cases where the skin was abraded and some suppuration ensued, I have found a couple of dressings similarly successful. In deep and extensive burns and scalds, where sloughing has taken place, cotton wadding is also the first application, and no attempt is made to remove the primary dressing until the discharge has become so great as to soak through the cotton and create an offensive smell. Then those portions that have been saturated are taken away, and again covered with fresh layers of wadding, without making any effort to remove the wadding that has not been saturated. In this way the discharge is drained continually away from all the parts in succession, till finally a dry bright-red surface is exposed on which to begin the healing process. At this stage strips of lint are well saturated with the lin. calcis and spread over the raw surfaces, with, for the first few days, layers of cotton wadding over them; old linen, of course, will do as well, and so, indeed, will the wadding by itself, but the disadvantage of the wadding is that it is not so easily peeled off the raw surfaces as the lint or linen, and hence the dressing causes more pain, the parts being exceedingly tender and sensitive. With the removal of the oil dressing, which is generally done about the second or third day, any particles of cotton that may not have come away readily while the plain wadding was applied, will now come away with the slips of lint that have been spread over them, and for the second dressing you have a perfectly clean and less sensitive surface to act upon.

In a great many instances I have observed it to be unnecessary to employ any other treatment, the burns healing in under the application of the oil; but in severe cases, where the granulating surface is very extensive, the granulations sometimes become pale and flaccid under the use of the oil, and in such cases a third remedy is had recourse to—namely, “Bullen’s Ointment,” the formula of which has been given in the case above reported. This ointment is applied in the same way as the oil, and after the first dressing a healthy action of the parts is set up, and granulation makes rapid progress. At times the granulations become exuberant, but they are easily checked by being rubbed over with sulphate of copper.

The ointment is continued until the parts heal in.

We have now gone through the treatment of burns and scalds in the North Infirmary. First plain cotton wadding—the soft side being always applied next the burns. If this does not succeed, the application of the oil and lime-water, and lastly the use of “Bullen’s Ointment.”

To the success attendant on each of the above plans of treatment I myself have been a daily eye-witness; but such testimony as mine is meagre indeed compared to the experiences of the surgical staff of the hospital, who, having adopted the treatment for years, and beheld its successes as well as its failures, speak in the most approving terms of its efficacy in the cure of burns and scalds. It would be presumption on my part to enter into the constitutional treatment of burns and scalds, and I will merely content myself with remarking that I have seen the administration of morphia suppositories attended with the most satisfactory and beneficial results.

Pleuro-pneumonia, followed by general Emphysema. By ROBERT L. SWAN, F.R.C.S.I.; Lecturer on Anatomy, Dr. Steevens’ Hospital.

On the 22nd June I was sent for to see Miss C. H., who had been complaining for the few previous days. She was a rather delicate-looking girl, although previously enjoying fair health, aged fourteen and a half years, and had not menstruated. On examination I found the ordinary signs of pleuro-pneumonia affecting the postero-inferior portions of both lungs, accompanied by the usual attendant febrile symptoms.

Under the combined influence of time and appropriate remedies the stethoscopic signs gradually diminished; air began to permeate the hitherto solid lung tissue, and a favourable termination of the case seemed about to occur. Still the pulse and temperature maintained an abnormally high standard, and that rapid recovery which is so generally seen in healthy young people did not happen. This condition continued from about the 1st to the 6th of July. On the last-mentioned date, in consequence of her urgent desire, I allowed her to be lifted on a sofa

near the window. July 7th.—On calling to see her this morning, I observed a small tumour on the right cheek. Thinking it was the result of some accidental injury, I did not pay it any particular attention. I made no examination of her chest on this occasion. July 8th.—To-day I was forcibly struck, on entering her bed-room, by the alteration in her respiration, which was hurried, numbering 66 in the minute, and shallow. The right eyelid was greatly swollen, and concealed the ball. On examination, I felt the areolar tissue emphysematous. A complete change had occurred in the stethoscopic signs. The lungs were perfectly resonant in all their extent, and a large, coarse crepitation was observable, particularly in the apex and in front, in those situations not previously the seat of disease. On placing my hand over the abdomen, I distinguished air in the planes of areolar tissue between the abdominal muscles. The countenance was congested, the lips and fingers blue.

From this date until death the symptoms did not materially alter. A gradual increase of the general emphysema was manifest. She died from evident asphyxia on July 14th.

I have considered this case worthy of being recorded, from the fact of it being a very unusual method of termination of pleuro-pneumonia. What the exact situation or nature of the lesion was is only open to conjecture, as an autopsy could not be obtained, and if it could, would be very unlikely to afford any reliable information. I am inclined to think that some pre-existing tubercular deposit, having become softened, may have afforded the communication from the air passages to the areolar tissue. It is, however, useless to speculate.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
October 9th, 1875.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Small-pox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	677	586	—	14	6	6	21	20	77	24·2
Belfast, -	182,082	542	415	—	15	23	2	2	10	40	29·6
Cork, -	91,966	183	198	—	—	13	1	5	6	5	28·0
Limerick, -	44,209	92	61	—	—	—	—	1	3	8	18·0
Derry, -	30,884	65	58	—	2	14	—	2	—	3	24·4
Waterford, -	30,626	65	59	—	—	—	—	—	8	7	25·0
Galway, -	19,692	27	17	—	—	—	—	—	1	—	11·2
Sligo, -	17,285	19	11	—	—	2	1	—	—	—	16·5

Remarks.

The returns for Sligo are wanting for the last two weeks of the period. A high death-rate prevailed in Belfast and Cork; a rather high one in Waterford, Derry, and Dublin; and a low one in the remaining towns. In London the rate of mortality was 20·7 per 1,000 annually, in Glasgow 22·3, and in Edinburgh 20·5. Zymotic diseases caused 166 deaths in Dublin, of which 136 took place within the municipal boundary. Diarrhoea was very fatal—especially to young children, of whom 52 under five years of age succumbed to the disease. Measles prevailed in Dublin, Belfast, and Derry; scarlatina in Belfast, Cork, and Derry; whooping-cough in Dublin; fever in Waterford.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for Month of September, 1875.*

Mean Height of Barometer, - - -	29.991 Inches.
Maximal Height of Barometer (9 a.m. on 12th),	30.898 "
Minimal Height of Barometer (8.45 p.m. on 26th),	29.058 "
Mean Dry-bulb Temperature, - - -	57.7°
Mean Wet-bulb Temperature, - - -	55.4°
Mean Dew-point Temperature, - - -	53.4°
Mean Humidity, - - -	85.8 per cent.
Highest Temperature in Shade, - - -	71.4°
Lowest Temperature in Shade, - - -	42.0°
Lowest Temperature on Grass (Radiation), - - -	39.2°
Mean Amount of Cloud, - - -	62 per cent.
Rainfall (on 14 days), - - -	3.180 Inches.
General Direction of Wind, - - -	E. and calm.

Remarks.

Beautiful weather, resembling that experienced in the same month of 1865 and 1870, prevailed from the 3rd to the 17th, with the exception of the 9th, on which day heavy showers fell. The air was almost calm on many days in this period—the nights clear and cool, the days warm and bright, with easterly sea breezes. On the 13th the wind freshened from E.N.E. The weather became very disturbed on the 17th, owing to extraordinary differences of temperature over Western Europe. At 8 a.m. on 24th the thermometer read 32° at Haparanda, in Sweden, and 79° at Biarritz, in France; the maximum temperature this day was at Biarritz 100°, and at Christiansund, in Norway, 46°. On the 26th a very serious cyclonic disturbance traversed this country from W.S.W. to E.N.E. In Dublin warmth, squalls from S.W., and heavy showers prevailed until 8 p.m., when the wind suddenly shifted to N.W., with fierce squalls, cold, and heavy rain. Temperature fell 16° in a very few hours. The barometer at 8 a.m. next morning stood at 28.80 inches at Aberdeen. The eclipse of the sun on the 30th was well seen. Lightning was observed on 8th, 18th, and 19th. Thunder was not heard. Fog prevailed on 1st (H.M.S. "Vanguard" run down by H.M.S. "Iron Duke" and sunk), 12th, 20th, and 21st. Great heat was felt in London from the 17th to the 20th—the maximum temperatures in shade being 80°, 85°, 82°, and 74°.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

HORSE-HAIR FOR SUTURES.

DR. W. W. GREENE in a communication to the *Boston Medical and Surgical Journal*, August 5, calls attention to the value of horse-hair for sutures. He is aware that he is not original in his use of them; but believes their application is limited. He thinks that horse-hair may profitably supersede all other materials for sutures, except where greater strength is required. It is so fine as to leave no scar and to allow the sutures being introduced very near together; perfectly non-irritant, if properly prepared; is more easily tied than any other material, and, contrary to what might be supposed, not inclined to slip while tying the second knot. Those who have tested it find its strength is remarkable, sufficient at least for all ordinary tension. He has applied the hair stitches in almost every locality, both in the skin and in the mucous membrane, and has never secured such beautiful, delicate linear scars with any other article. Where greater strength is needed for the general support of flaps, silk or silver-wire may be used for that purpose, and the hair for accurate coaptation of the edges. Dr. Greene seldom uses more than a single hair, although it may be doubled if desired. He takes the long hair from the tail of a young, healthy horse, and first thoroughly rinses it in warm water. He then boils it for a half-hour in soda-water (about an ounce of bicarbonate of soda to two quarts of water). When removed and rinsed in clean warm water it is ready for use. This process renders it perfectly innocuous and gives it the right degree of pliability.

[Dr. Fayrer, in his *Clinical Observations in India*, states that a white hair out of a horse's tail is in many respects better than any suture hitherto devised. He cannot tell why it should be so, but he has found that a hair from the tail of a white or grey horse is better than a black hair.—G. F. D.]

OXYGEN AS AN ANTIDOTE TO PHOSPHORUS.

THE question arose at a recent sitting of the Académie Royale de Médecine of Brussels (*Centralblatt für Chirurgie*, No. 23, 1875), whether or not the antidotal effect of the crude oil of turpentine against phosphorus might not be due to contained oxygen. (It should be said that the rectified oil is valueless.) In order to settle this point, MM. Thiernesse and Casse undertook a series of experiments upon dogs that had been

poisoned with large doses of phosphorus. Defibrinated and arterial blood was injected, and direct intravenous infusion of oxygen gas was also practised. The former means failed entirely to give relief, and these observers then turned their attention entirely to the trial of oxygen infusions. The operation is not without risk, but as these cases are desperate, it is justifiable. Injections were made into the external saphena vein by means of an apparatus especially devised for the purpose. The results obtained on the whole were highly satisfactory, and lead to the belief that oxygen is the essential antidotal constituent of the crude oil of terebinthinæ.—*Philadelphia Medical Times*.

“BALLOONING” THE BLADDER FOR VESICO-VAGINAL FISTULA.

DR. W. A. BYRD (*New York Medical Journal*, September, 1875) has devised an ingenious plan by which the operation for vesico-vaginal fistula has, in his hands, been greatly simplified and facilitated. He procured some children's toy India-rubber balloons, that were not inflated, and taking a piece of hard rubber tubing three-sixteenths of an inch in diameter and three-fourths of an inch in length, and a piece of elastic tubing of the same diameter, seven inches in length, he had one end pressed over the hard tube, and over both of these the neck of the balloon was placed and tied. As this single rubber balloon was too thin to bear the pressure necessary, it was slipped inside a second similar balloon. The balloon as thus made has double walls, is not more than one-fourth or three-eighths of an inch in diameter in a collapsed state, and can readily be distended with air or water to a diameter of from five to six inches. Dr. Byrd thus describes how he used his apparatus:—The patient being placed in the position recommended by Sims, and the speculum introduced, a small copper wire with a knob on the end of it was passed into the bladder through the urethra, and out through the fistula into the vagina, the end then being bent back so as to emerge from the vulva. The knob on the end of the wire was then slipped into the end of the flexible tube attached to the balloon, and the wire made to retrace its course, which brought the end of the tube out at the meatus urinarius and the balloon safely into the bladder. The wire was then detached and the nozzle of a syringe inserted in the tube, and the balloon slowly filled with water to such an extent as to dilate the bladder well, and to define the fistula by making the walls tense and preventing the opposite wall from interfering by falling through or into the fistula. The edges of the fistula were now pared, which paring, on account of the convexity given them by the dilated balloon, was much better and more quickly done than at the former operation; the stitches were then made with iron wire, which for the same reason was much more easily used, the water was then let out of the balloon, and the sutures twisted down, after which the balloon was withdrawn from the bladder by making slight traction on the India-

rubber tube. The advantages claimed for this instrument are: 1. The material is to be had in almost any town, and will not cost above forty or fifty cents, and any one with a little ingenuity can make one in from five to ten minutes. 2. It is easily dilated with any ordinary syringe, when it defines the fistula perfectly, throwing the walls of the fistula prominently out from the convex surface of the balloon, which renders the paring more speedy, certain, and easy. 3. It prevents the posterior wall of the bladder from interfering with the operation. 4. It prevents blood flowing into the bladder, and there clotting and giving trouble. 5. It allows the sutures to be more rapidly inserted, and more easily placed at proper distances from each other. 6. By pressure and the temperature of the distending fluid, it represses hæmorrhage. 7. When undistended it occupies a very small space. 8. At the suggestion of Dr. Landon, of Burton, Ill., it can readily be applied as a tampon in cases of metrorrhagia, possessing the advantage of being smaller, cheaper, and more readily obtained, than Baun's colpeurynter.

HOT PACKING IN ACUTE RHEUMATISM.

A NEW treatment has been adopted in Mount Sinai Hospital in the treatment of acute articular rheumatism, and apparently with marked benefit. It consists in packing the patient with blankets wrung out of hot water, and changed as often as their temperature falls. In one case, where the disease had invaded every joint, the patient was relieved in eight hours. The rheumatism shows a tendency to recur, and when it does the packing is practised as at first. Local packings are also used with benefit. The results obtained are fully equal to those obtained from cold packings and the use of ice, and have the advantage of not shocking the feelings of the patient's friends.—*New York Medical Journal*.

PHYSIOLOGICAL ACTION OF GELSEMIA.

GELSEMIA is the active principle of the gelsemium sempervirens, or yellow jasmine, a tincture of the root of which plant has for a long time been recognised in America as a remedy in neuralgia. The tincture has also been recently used successfully in England in cases of neuralgic toothache (vide *Practitioner*, Aug., and *Med. Times and Gaz.*, Aug. 14); and in other forms of neuralgia, with equally favourable results, by Dr. Jurasz, of Heidelberg.* The following résumé gives the conclusions which Dr. T. Ott, of the University of Pennsylvania, has arrived at in regard to gelsemia, as the result of a series of carefully conducted experiments, given in detail in the *Philadelphia Medical Times* of July 31:—1. In cold-blooded animals it paralyzes first the sensory ganglia, and then the motor ganglia in the central nervous system. This order is reversed in warm-blooded animals. 2. It diminishes the pulse and pressure. 3. This decrease of the pulse-

* *Loco cit.*, and *Centralblatt*, July 10.

rate is due to lessened irritability of the excito-motor ganglia of the heart. 4. The fall of pressure is due to diminution of cardiac irritability and vaso-motor tonus. 5. It decreases the respiration through a paralyzing action on the respiratory centres. 6. It dilates the pupils. 7. It reduces the temperature.

TRANSPARENCY OF SOLID TUMOURS.

TRANSPARENCY has hitherto been regarded as a property of collections of fluid, and looked upon as of great diagnostic value in the examination of hydrocele and cystic tumours. It has, of course, been observed that the fingers, ears, and other portions of the body transmit light to some extent; but, so far as Prof. Dr. Lücke (*Centralblatt für Chirurgie*, 1875, No. 29) is aware, notice has not been called to the fact that some tumours possess this quality; and not long ago he made a false diagnosis of a tumour which he examined. A man presented himself with a tumour of the testicle of the left side, which had existed for several months, and which at the time of examination had attained the size of a goose-egg. It was not painful, and the portion of it which corresponded to the epididymis contained some hard, knotty masses, while in the principal portion of it, which was in front, there was a distinct sense of fluctuation and complete translucency where the light was of moderate intensity. The diagnosis of tubercle of the testicle with hydrocele was made, and the operation of castration was performed. The operator was surprised to find, instead of the fluid which he expected to meet with, a grayish, cloudy, spongy mass, which under the microscope was found to contain sarcomatous elements. The translucency of the mass was retained after its extirpation, and even after twenty-four hours had passed the presence of this quality was still noted. A tumour of this kind, and with these characteristics, could readily be mistaken for a hydrocele: indeed, without the use of an exploring needle an accurate diagnosis would be impossible. It is reasonable to suppose that the existence of the same characteristic could be established in tumours of many other kinds, if their position in the body permitted an examination. Among these would be lipomata and myxomata, while in those of a cancerous and adenomatous character it would be absent. Prof. Lücke does not know whether it would be possible, by more accurate observation as to the character and intensity of the translucency, to arrive at more certainty in diagnosis, but considers the subject worthy of investigation.—*Philadelphia Medical Times*.

DIAGNOSTIC VALUE OF THE BRUIT DE GALOP IN INTERSTITIAL NEPHRITIS.

M. POTAIN recently brought before the *Société Médicale des Hôpitaux* the importance of the *bruit de galop*, which is occasionally met with in the auscultation of the heart, as a means of diagnosis of interstitial nephritis.

This bruit is presystolic, occupying a portion of the long pause, and having its maximum towards the apex. According to M. Potain, it is met with especially in the subjects of interstitial nephritis, and disappears at the same time as the renal disease. In discussing the mechanism of the bruit, M. Potain at once rejects the explanation based upon the non-simultaneous contraction of the two sides of the heart, and endeavours to prove that it is due to exaggerated distension of the hypertrophied auricle.—*Gaz. Hebdom.*, September 3rd.

GONORRHOEA INJECTION.

DR. HABERKOM recommends the following injection:—A teaspoonful to be thrown into the urethra two or three times daily:

R. Quinæ sulphatis, gr. vi;

Glycerinæ, ʒii;

Acidi sulphurici dil., gtt. v;

Aquæ, ʒvi.

—*The Doctor*, July, 1.

IODISED GLYCERINE.

THE following formula for this preparation is given in the *American Druggists' Circular*. It is stated that it has the advantage of not staining the skin, and is quite as efficacious as the officinal tincture of iodine:—Iodide of potassium, one ounce; re-sublimed iodine, one ounce; glycerine, to make sixteen fluid ounces. Powder the iodine and dissolve in about four ounces of the glycerine, add the iodine and rub well in a mortar until it is dissolved. Lastly, add the remainder of the glycerine.

DIARRHOEA OF PHTHISIS.

AN excellent article of diet when this symptom is present is milk boiled with mutton suet until it is thick as cream. The method of preparing it is to put a piece of suet into a bag and boil it in the milk until the requisite consistency is obtained. To this may be added such remedies as the physician may wish to administer, as persulphate of iron, opium, belladonna, &c. Belladonna is said to be very serviceable, for the reason that it possesses the power of producing contractions in the unstriped muscular fibre of the intestines. The following pill was also recommended:

R. Resin of turpentine, . . . gr. iij.

Nitrate of silver, . . . gr. ʒ.

Opium, . . . gr. ʒ.

M.

S. One p. r. n.

Any of the oleo-resins, perhaps, may be used.—*N. Y. Med. Record*.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XI.—*Observations on Aix-les-Bains.** By SIR DOMINIC CORRIGAN, Bart., M.D., &c.

PERHAPS a few observations on Aix-les-Bains may not be unacceptable to some of my friends here who may desire to visit the place, or who may think of recommending it to others. They were jotted down while the impressions were still new and vivid. I arrived there on the 28th July of this year late at night.

I will first make a few personal remarks, which may be worth remembering, and which may be useful to others.

I wrote the day before to one of the principal hotels, hoping to have accommodation, but on my arrival there were no apartments vacant. The same reply was given at one hotel after another. I could not have received intimation from the hotel to which I had written, as I was rambling about from place to place, and there was no *poste restante* anywhere for my little party. We arrived at 10.30 p.m., and our ramblings about Aix in search of a fitting hotel occupied us to 11.30. We should have had a fine moonlight view of Aix from our small omnibus, but there was no moonlight—and here for a minute's digression. The *conducteur* of our little omnibus said he would start at once, and that our baggage was to follow. We were, however, old travellers, and our invariable reply was—“*Nous attendons les bagages.*” It is necessary to

* Read before the Medical Society of the College of Physicians—November 10, 1875.

be firm on this point, for if you leave your portmanteaus behind, you will be fortunate if they reach you next day, or at all.

We were at length received into a hotel in which we were promised the required accommodation next day if we would be content with a *maison meublée* for the night. We had no option; but the first *maison* was dirty. We debated as to whether we should not hold possession of the omnibus until daylight, when we were at length introduced into a *maison meublée*, with rooms in which we had little more than space to turn, but which were perfectly clean; but still the night was miserable. The foot of my bed had been allowed to sink to a considerable angle, so that as I attempted to sleep I slid down to the foot, and this gave rise to a very uncomfortable dream of my being at the foot of a tall ladder, up which I was endeavouring to climb with my back to the rungs, and every moment when I dreamed I had achieved some distance I felt myself suddenly sliding, as if down the slope of a fire-escape, until I was jerked suddenly by my arrival at the bottom, which I found, on my awaking, was the foot-board of the bed. I pushed myself back, while awake, to the head, but only to have my dream renewed, until at length morning came, and about four o'clock a.m. I went to the window. The streets were deserted, when there appeared to my eyes what seemed a most melancholy object. It was a sedan chair, carried between two men who marched quickly along in deep silence, carrying within the sedan chair what was evidently a human body, for the feet projected, covered by flannel tightly drawn round them, while the body within was concealed from view under a coloured curtain, which hung down from a circular head, and was drawn all round. The grey haze of the morning—the silent yet rapid tread of the bearers—the projection of the feet and the flannel covering them—brought back, on the instant, to my mind's eye the cholera cots of past years in the silent, deserted streets of Dublin, as I had often witnessed them, and at about the same early hour.

I began to think of returning to the railway station, and getting out of the melancholy-looking place; but previously to the time of doing so we went to the hotel, of which this *maison meublée* was an appendage, had a good breakfast, and this restored my good humour and banished from my mind the discomforts of the *maison meublée*, the tiresome dream, and the shadowy sedan.

The *maitresse de l'hôtel* proposed that we should pass another night in the *maison meublée*, and that she would endeavour to

accommodate us next day in the hotel. This was too much to bear. We went out at once on a *voyage d'exploration*, and returned, having secured apartments in one of the best hotels, for which, it is true, we had to *pay*, but we were glad to get them. To avoid these *désagréments*, arrive, if possible, at Aix by an early train, and provide yourself at once with a "Guide" or "*Les Promenades d'Aix-les-Bains*." These little books will furnish a list not only of all the hotels, but of numberless *maisons particulières* and *pensions*, so that you can at leisure make your choice—the hotels being prized according to their nearness to the baths (*l'établissement*), and their command of the mountain and lake scenery, and to their gardens. As to *chambres garnies à louer*, their number is legion. I did not enter into any of them. My experience of the *maison meublée* satisfied me.

My next step was to commence my bathing lessons. The physicians on whom I called—Vidal and Bertier, father and son—were indeed very kind to me. The baths and douches are given gratuitously to physicians. I obtained billets for my baths and douches from Monsieur le Docteur Vidal, and began them without delay. The usual course was three douches and one bath, and again the same; and now I shall describe the process from my own experience.

Some take the douches at three or four in the morning, and then retire to their hotels to have themselves "packed," and sleep till ten or eleven. I did not relish this mode of procedure, and I chose an early, but not what appeared to me an unreasonable hour—I chose from eight to nine o'clock for my douche. And now for the process:—At eight o'clock (I rose at seven o'clock) there was at the door of my bed-room one of those sedan chairs already described. A double blanket, provided by the hotel, and white as snow, was spread upon the seat and upon the foot-board, which was so constructed as to be lengthened or shortened, according as required for the feet. In this I was folded up, half dressed, the curtains drawn, and the journey commenced.

It did not occupy more than six or eight minutes to reach the *établissement*, but it seemed to me an age. I felt as if a single false step on the part of my bearers would toss me out on one side or the other like the contents of a hand-barrow, and without the possibility of my helping myself, and I felt this the more as my conveyance mounted flights of steps. At last I was liberated, and, after some little delay in the corridor, was passed

into a small chamber, where I divested myself of the little dress I had on, which was immediately removed by the *garçon* who attended me. A door, half glass, was then opened, and I found myself in the douche-room, about six or eight feet square and twelve high, with an arched brick roof large and airy, with a floor in which there was kept constantly a depth of three or four inches of hot water circling about from two pipes of about $1\frac{1}{2}$ inch diameter, the superfluous water running off through a discharge opening. In this douche-room two able-bodied attendants—and indeed they required to be so from their unceasing labours—took me by the hands, and placed me sitting on a wooden stool, with a smaller and lower stool for my feet. They were clad merely in a plaid vest that fitted closely, coming half way down the arms, and a pair of drawers that extended in like manner half way down the thighs. They immediately commenced operations. One stood in front of me, the other behind me; and while each directed a tube in full force of hot water upon back, shoulders, arms, and legs, each attendant laboured strenuously in shampooing back, shoulders, arms, and legs. This process lasted about fifteen minutes, the two tubes discharging their contents with the force of a fire-engine; and as each discharging tube obtained its supply from two united tubes—one with very hot water, the other with cold—the temperature was raised instantaneously to please the bather's feelings by a tap on each stop regulating the supply, the guide to temperature being a question from either of the shampooers if it was "*bon*." There is no thermometer used, nor is it necessary; and my opinion, from my own feelings, was that the higher the temperature, consistent with comfort and capability to bear it, the more efficacious was the douche. This process being at length completed, I stood up, and was assisted, if necessary, by one of the attendants to a round iron bar secured in the wall at each end (but separated from it by a small space), on which I rested my hands, with my face to the wall, much in the same position in which I might suppose a garotter to be placed for his flogging. While this is being done the second attendant fits on the open end of one of the discharge tubes a rose like that of a garden watering-pot, lays on a stronger and hotter force of water, and makes it play over back of neck to heels—now here, now there, now everywhere, until it makes one feel as if this needle-bath were flaying him, and yet the sensation is not of pain, but it is of pleasure verging on pain. This does not continue more than two minutes,

I think, but the time seems much longer, when a bell rings one blow, and then comes the *maillot*, or swaddling-clothes.

“MAILLOT,” OR SWADDLING-CLOTHES.

The glass door into the bath-room opens, and there appears in the doorway the sedan or *chaise à porteurs*, with its curtains drawn back, its foot-slide drawn out, and a doubled white sheet spread out to sit on, and reaching as high as your shoulders, with ample folds to envelop your feet. While one of the *doucheurs* still continues the unceasing discharge of hot water on your legs, the other applies a hot napkin over your neck and chest, and then having hastily dried you, and tied over your head and knotted under your jaws another napkin folded cornerwise in the style of one of our countrywomen carrying a basket of eggs to a country fair, you sit down in the sedan (*chaise*), and are quickly enveloped in the hot sheet, over which the thick, warm blanket is folded, the curtains drawn close, the bearers set out, and in a very short space of time deliver you at the bed-side in your hotel. Here, without disturbing any of the wrappings, the two carriers (*porteurs*) lift you by the legs and shoulders, and quickly drop you into your bed. The bed-clothes are then drawn over you, the hot packing is delicious, and for twenty minutes you enjoy a most refreshing sleep or composure of brain. At the end of twenty minutes your *garçon*, who had accompanied you with the blankets to the hotel, enters, bearing on his arm a *panier*. This is an open basket-work, like a child's go-cart of wicker-work. It is about four feet high, of equal diameter throughout, and divided across the centre by an open wicker-work partition. In the upper portion lie some napkins and your own night-dress, which rest on the sides and open-work partition, while in the lower portion hangs, suspended by a cord from the screen above, an iron brazier containing red-hot wood ashes. This arrangement heats napkins and night-dress to a most comfortable temperature, and at the same time protects them from being scorched or burned by the live ashes. The *garçon* proceeds quickly to divest you of the *maillot* or swaddling clothes, to put on your hot night-dress, to lay over your chest, in front and on your shoulders on each respectively, a very hot napkin, and over these your ordinary bed-clothes; and he then leaves you, telling you that you are thus placed “*pour calmer*,” and that you may so sleep or lie as long as you like. The process, as far as any interference from without is concerned, is now complete; and thus left, you generally

fall into a refreshing sleep of half an hour, and some sleep much longer. Such is the *douche*; and perhaps I may now add a few words as to the division of the day for the process. I have already noticed that the *établissement* is open at three o'clock in the morning, and that many use the *douche* at that hour. I do not think that hour suits our habits; moreover, it entails the trouble of going twice to bed every night, and we do not like trouble. My own arrangement was to rise every morning at seven o'clock, wait for my turn, and then return to the hotel and have in due time my breakfast. This gave me the whole day for short excursions, reading, and letter-writing, or, if the day was very hot, varying my occupation with a midday *siesta*. My usual practice was three or four *douches*, then a plain warm bath, and again, as before, the *douches*.

"BAINS ET PISCINES."

The *bains* and *piscines* may be dismissed in a few words. The *bain* is simply a plain warm bath, in no respect differing from an ordinary warm bath at home. The *piscine* is in every respect a most comfortable bath, and very superior, in my opinion, to the *bain*. It is a very fine swimming bath, warm as the ordinary warm bath. It is open nearly the whole day, and capable of accommodating about thirty or forty bathers without crowding, permitting swimming and diving. It is provided at one end with a cold *douche*, in which many of the bathers take great delight, alternating warm bath and cold *douche*. I always remained in the *piscine* for at least half an hour—many remained in it for twice the length of time—and thus obtained from it the full exercise of my limbs and promotion of circulation by my own muscular exertion, without the aid of the *doucheur*, and without being chilled. The attendance also at the *piscine* is very good. When about to leave the bath, the Oriental custom of clapping the hands two or three times is the signal, and an attendant receives you, on emerging, with a hot sheet, dries your limbs with hot napkins, and then assists you, if necessary, in dressing. The temperature of the *piscine* was usually about 35° centigrade, 95° Fahrenheit. I tried the warm bath and the *piscine*, but after one trial of each I invariably gave the preference afterwards to the *piscine*. I also lessened to a minimum the use of the *chaise à porteurs*. After two or three days' experience I never used it on the *piscine* days, but walked to the *piscine*, and from it back to the hotel; and on the *douche* days

I used the *chaise à porteurs* on my return. I never got completely free of my horror of the sedan. In these walking excursions to the baths I was, however, greatly aided by my morning dress of genuine Irish frieze, obtained as a kind gift from the Poul-a-Phouca or Ballymore-Eustace Mills. It is of all materials the best for the out-door morning walk, not lying close to the skin, and confining in its loose woolly texture so much air as to make it a very superior non-conductor of heat.

That the waters of Aix-les-Bains in douches and baths are most beneficial there cannot be a doubt, aided as they are, no doubt, by a mild and, generally speaking, a very warm atmosphere; but on what does the benefit generally acknowledged mainly depend? I believe on the superabundance, the profusion of the supply of hot water which Aix possesses almost without a rival—*L'eau y coule par torrents, bien différente en cela des autres établissements.* (*Les Promenades d'Aix-les-Bains*, A.D. 1870). Four and a half millions of litres, equal to about one million gallons, are poured forth every twenty four hours, and to this may be added that the perfection of the arrangements cannot be exceeded. A French acquaintance observed to me, "I have been to other sulphurous waters—I have been to Leutron; the waters are stronger, but the administration at Aix is better." In addition to these is a *douche locale*. In a very lofty chamber, arched over, there is a *jet d'eau*, which is still further divided when it ascends by striking against a concave canopy, or umbrella, of metal, and then tinkles over on all sides. This furnishes a quantity of spray that supplies the air with hygrometric moisture. In each corner of this chamber is a metal cylinder about three feet high, and from the top of each three short tubes project to which other tubes are attached. Three persons were seated round each of the cylinders at my visit. At one was a lady with the vapour playing on her two hands, covered with a napkin; beside her another lady with a tube fitting over her mouth like a speaking trumpet; and the third, a gentleman with one of his hands and arm enveloped in a napkin and submitted to the action of the vapour. There is here, as everywhere through the establishment, the greatest attention paid to the minutiae of personal comfort. The lady who was using the speaking trumpet addressed the attendant, who immediately brought her a wooden stand, calling to mind our carriage-lift. This was placed beside her, and in an instant adjusted to the proper height, with a semi-circular rest for her elbow. At the next cylinder were two ladies,

one with the local vapour douche playing, directed over her eyes and nose, the other with the hot air and vapour directed to her ears and brow alternately; while the third, a gentleman, presented a singular aspect—he was sitting reading, while he had wrapped round the extremity of his tube a napkin, and into his mouth the tube and napkin were introduced to fill it. Through this he inhaled the hot air and vapour, and exhaled through his nose, “ever and anon” removing the tube, for more freedom of breathing; for a moment his head, mouth, and big tube projecting from it gave him the imitation of an elephant sitting in an arm-chair.

There are some impediments which the waters of Aix have to contend against with which we ought to be acquainted, as they interfere to our prejudice as well. The first of these is the dietary. It is too good for visitors from our country; the French breakfast, or *dejeuner*, at half past ten or eleven o'clock in the morning, is too heavy—fish, butchers' meat, fowl, fruits, mushrooms, wine, &c., eaten generally in a very high temperature, followed by a dinner excessive in profusion and kind; while in the middle of the day, and without exercise to work off these effects, the merits of “cognac,” “chartreuse,” “kirch-wasser,” and “elixir of spa,” are discussed by gentlemen *sous les arbres*, who naturally refer to ladies for their opinions, and mixed in these colloquies now and then the puff of a mild cigarette, but not from Irish lips. We had better recommend ourselves and our friends in visits to Aix to avoid these impediments, and to content themselves with our own plain breakfast without wine, and to refrain from “kirch-wasser,” and “chartreuse,” and “elixir of spa.”

The next impediment to the good effects of the waters of Aix is visits to the casino, when these consist, as they not unfrequently do, of sitting out after the sun has set, and especially after heavy rains, in the gardens thickly planted. The gravel walks, it is true, dry up on the surface very rapidly, but the substratum of moisture remains for some days, and the damp chill of evening, as in all warm countries, sets in after sunset suddenly and injuriously.

There is also a habit of sitting out under the trees in the gardens of the hotel to listen to travelling musicians and *prestidigitateurs*. Time creeps on, and with it the almost imperceptible, but not less certain and injurious, night-chill. These two counteracting agents to the good effects of the waters of Aix ought to be shunned.

There are appliances for pulverisation, but I will not make any observations on them. I have strictly confined myself to such

applications of the waters of Aix as I have had personal experience of; and it now only remains for me to record my obligations to Monsieur Le Dr. Vidal, Medecin Inspecteur des Eaux d'Aix, Savoie, and to Dr. Fr. Bertier, Medecin aux Eaux d'Aix et Marly, from whom I received the kindest attention.

I will not enact the part of a tourist's guide, but there is one drive of about two hours so beautiful that I cannot omit to notice it here for its lights and shades, its scenery of rock and vines, its chestnut woods, and its water. I have to thank Dr. Bertier for it; on a card he wrote the following directions:—"Aller à Tresserve en voiture, traverser le village et revenir par le lac en passant par Terenure."

We ascended the village by zigzag roads, bordered with acacias and vines. On our left was spread out, far below us, the valley with its cultivated fields, its vines, and its tall poplars; beyond lay the cliffs of tufa or chalk rock contrasting in their horizontal white abruptness with the verdure below, and when we rose to our high level, the beautiful lake below on our right, scarcely rippled on its surface, and on its opposite side the towering rocky border rising, not too abruptly, covered with shrubs and verdure to the top, varied by stripes of bare rock. Our road as we descended beyond the village lay in similar zigzag roads to those by which we had ascended, bordered by magnificent old chestnut trees in full verdure and full fruit. Arrived at the turn homewards, we reached the far end of the lake, and our route lay along a level causeway built in the water of the lake, but near its border; on each side of us, as we drove along, for some miles, shoals of small fish darted here and there among the stems of the typha and of water-lilies, yellow, blue, and white, with their floating leaves and lovely flowers, while above them fluttered myriads of beautiful painted butterflies, or skimmed along like hawks the gauze-winged dragon flies. And this ends my recollections of Aix-les-Bains.

ART. XII.—*Clinical Notes of a Remarkable Case of Obesity, treated with Liquor Potassæ and Extract of Fucus Vesiculosus.** By A. W. FOOT, M.D., Senior Physician to the Meath Hospital.

I WISH to bring under the notice of the Society a short account of a remarkable and sudden development of obesity in a boy seventeen years of age. The treatment adopted was so far successful in

* Read before the Medical Society of the College of Physicians, November 10th, 1875. [For the discussion on this paper see p. 549].

that he was restored from a condition of absolute helplessness to the use of his limbs, was enabled to stand and walk without assistance, and to make himself useful about light work. The medical treatment adopted consisted chiefly in the administration of large doses of liquor potassæ—up to 3ij. three times a day—and of the liquid extract of the *fucus vesiculosus*; these remedies were used separately and in combination. The cause of the rather sudden development of adipose tissue about the time of puberty appeared to me to be connected with an arrest of development of the testes, and to be comparable to the obesity observed in animals deprived of the essential organs of reproduction. These six photographs* of the boy, taken in the Meath Hospital, will convey some idea of his condition.

He was admitted 15th April, 1875. At that time he had not left his bed—although apparently in robust health—except on three or four occasions, since the July previous. He was quite unable to stand, or even to sit up. He was conveyed to hospital in a cart, lying on his side on a truss of straw; the cart was backed up to the hospital steps, the tail-board removed, belly band loosened, shafts raised, and he was slid down along the inclined plane of the cart into the arms of two of the house porters, who carried him up to his bed. My first acquaintance with him was in January, 1874, when his mother brought him to the hospital for advice, because he had at that time been getting so fat that for the last three or four months he had been able to do no work. He was being brought up to his father's business of stone-cutting, and "though strong enough, when he stooped he got caught in the chest, and could not give a second blow to the chisel." On this occasion his remarkable appearance elicited such comment from a crowd of students loitering in the hall that no entreaties or commands on the part of his mother could induce him to remain. He was brought again to hospital a month afterwards. On this occasion I had to have him locked up in the resident's room, to protect him from the admiring crowd which followed him about. He had been twenty-four days in hospital when, having found an opportunity of getting at his clothes, he made his escape home. At this time he possessed fair powers of locomotion. When he presented himself for the third time—April, 1875—he had become alarmed at his condition, and told his mother he would remain, and that she might keep his clothes, so that he

* Exhibited to the Society.





CASE OF OBESITY
D^R A WYNNE FOOT

Enth'd by John Fairman, Dublin

From a Photograph

could not run away again—an undertaking there was little chance of his achieving, inasmuch as he was quite unable to stand, even with assistance. His age at this time was seventeen, his height 4 ft. 5 ins., his weight 9 stones 2½ lbs. His diminutive stature gave him the appearance of being as broad as he was long. He had coarse red hair; his red cheeks seemed bursting with fat; they encroached upon the bridge of his nose, and almost buried his blue eyes, which yet seemed to be protruded from their sockets, and to be contending against the encroachment of his florid and prominent cheeks. He appeared to have no neck, as his chin lay upon the front of his chest, and some thick, brawny, transverse folds occupied the space behind between the occiput and the shoulders. There was a marked accumulation of fat in the mammary regions, the situations of the nipples being indicated by deep depressions; the belly lay spread out on the bed beside him, and considerably in front of his knees, as he lay on one side; there was a deep transverse fissure across the hypogastric region. The legs and thighs seemed disproportioned to the rest of the body; the fat decidedly preponderated upon the head, neck, and trunk. The gluteal regions were comparatively small, principally from marked muscular atrophy, due to long disuse of the muscles in this neighbourhood from confinement to bed; the gluteal muscles scarcely responded to strong interrupted currents, as well from their diminished bulk as from the bad conducting power of the adipose tissue overlying them. To this condition of these muscles I was inclined to attribute much of his inability to stand, though he himself said it was the weight of his belly dragging on his spine prevented him from doing so. His skin was very vascular. The general colour of his flesh was reddish, except about the feet and legs, which were more or less purple, and marked with streaks of bluish shade, especially about the tendo-Achillis on either side, where the integuments were almost of an indigo colour; these livid parts, when firmly grasped, became quite white, and very slowly recovered their bluish colour on the removal of pressure. There were also linear streaks of a purplish shade along the fronts of the thighs. Some of the measurements made were as follows:—Circumference of the cranium, 22½ ins.; submental circumference, 25 ins.; from one acromion to the other, across the back, 15¾ ins.; circumference of the right arm at the fold of axilla, 12 ins.; of the left arm at the same place, 13 ins.; of the right wrist, 6¾ ins.; the left wrist, 6½ ins.; bi-mammary circumference, 39 ins.; of the waist, 39 ins.; of the right calf, 11 ins.; of the left calf,

10½ ins.; of the right hand, at the second phalanx of the fifth finger, 7 ins.; of the left hand at the same place, 6¾ ins.; of the neck, 16½ ins.; from the tip of the lobe of one ear to that of the other, measured along the convex outline of a semi-circle of red fat which reposed upon the front of his chest, 11½ ins. The circumference at the umbilicus could not be obtained, as this point, owing to the pendulous condition of the belly, was much below the iliac crests. The situation of the umbilicus was marked by a deeply concave depression the size of a shilling. Although he was able to do little more with his lower limbs than move them slowly in bed, his hands were pretty strong—the dynamometer registered a grasping power of 12 kilos. with the right, and of 13 with the left. His hands and feet were small and shapely, contrasting with his awkward and unwieldy body, corroborative of one of the deductions of Dr. Chambers, “that in corpulent persons the bony framework of the body is less massive than in the spare, as indicated by the smallness of their hands and feet.” Dr. Chambers’ conclusions were derived from the observation of 38 obese persons, ranging in weight from 16 to 36 stones.

When admitted to hospital on the last occasion he was quite unable to support himself on his legs, no matter how assisted; he was unable to raise himself on his elbow—I offered him a shilling if he would do so; he tried, and fell back exhausted with the attempt. When turned in bed he puffed and panted with the exertion. In order to have his photograph taken, an attempt was made to carry him, sitting in a chair, to the photographic room, but he could not be got to sit up, and he was carried down, slung in a sheet, by six students, and laid on a sofa, when the operation of photographing him was effected, though imperfectly, owing to the difficulty of getting him into the proper positions. His unwieldy helplessness created much difficulty in the process of defecation, and we were obliged to adopt the manoeuvre which he had found to be most convenient prior to his admission. His legs were assisted out of bed, so as to rest on the floor; he worked himself round, so as to lie with his stomach on the edge of the bed, a suitable vessel was put on a chair behind him on a level with the anus, and the fæces projected backwards into it. This clumsy proceeding was found more practicable than the use of a bed-pan, and he was quite unable to sit upon a night-chair. He complained of pain and weakness in the back, referred to the lower dorsal region of the spine and to each infra-scapular region; he said it was the “weight

of his belly was breaking his back;" that he felt it most when he tried to "sit up straight on himself," and that this "grab in the back" and weakness were daily increasing; the lower dorsal spines were tender to strong percussion. His usual and most comfortable position in bed was lying three-quarters round on his face, the belly spread out before him, and his chin resting on his right forearm—in this position the drag of the abdomen upon the back was least felt.

His genital arrangements were rather peculiar—a fair amount of reddish-brown hair almost quite concealed a penis of the most infantile description; a bit of twisted skin covered a glans, which measured 15 mll. ($\frac{6}{10}$ in.) long by 12 mll. ($\frac{4}{10}$ in.) broad; there was some smegma preputii round its base. There seemed to be no body to the penis, nor was it buried in the fat of the part. The penis did not appear as large as that of a child a year old; from the peno-scrotal angle to the tip of the prepuce, when drawn out, measured 20 mll. ($\frac{8}{10}$ in.) The scrotum was sufficiently capacious, but did not, any more than the penis or eyelids, participate in the general obesity; the testes were so soft and small as to be felt with great difficulty, and were certainly not larger, if so large as an ordinary garden pea; they could be pinched tightly between the fingers without causing any uneasiness—so firmly could they be squeezed that I was convinced that any pain caused was due to the pressure of the scrotum. He said they had never been any larger. It was ascertained that he had had erections, but none for the last three years. His voice was not puerile, and he had slight indications of sexual hair about the face. His circulation was feeble; the action of the heart weak and rapid, but not irregular, or attended with abnormal sounds. His average pulse, from many observations, was 128.5; it was never observed below 116, and reached 140 when lying quiet in bed; when he was disturbed or moved it became much more rapid. His temperature was normal in the axillæ, 98°·2 Fahr. He was very sensitive to cold, though so fat, and suffered much in frosty weather; the extremities became very livid in cold weather; his mother told me that for the last two years his feet, legs, and thighs would get "as cold as the snow, and turn blue." Cupping glasses or leeches produced persistent ecchymoses, owing to the languor of the capillary circulation. Leech bites were surrounded with persistent indigo discs as large as sixpenny pieces. It was very difficult to get leeches to fasten on his skin, from the highly disagreeable odour it exhaled of hircic and caproic acids; this

symptom was relieved by warm baths. His respiration was shallow and rapid, though there was no pulmonary obstruction; its average rate was 32.2. His vital capacity was frequently tested with Casella's spirometer, kindly lent me by Dr. Grimshaw. On one occasion (27th April) the mean result of ten trials of this instrument was 56.6 cub. ins., ranging between 60 and 54 cub. ins. On another occasion (18th May) mean of ten observations was 62.25 cub. ins., the extremes 65 and 45. On 29th May, mean of ten observations was 58.15 cub. ins., extremes 42 and 66 cub. ins. 14th August, his mean vital capacity was 59 cub. ins. How far this persistently small respiratory capacity was concerned as a *cause* of the fat by impeding oxidation, or was the *result* of an impediment to respiration owing to the embarrassed condition of the abdominal muscles, is a question not easily answered, but it is a fact that the lungs have been found very small in those who have died of fat. I found that the mean of five observations on the vital capacity of a boy who was less tall by $\frac{1}{4}$ in. was 119.6 cub. ins.

His mental capacity was quite proportioned to the amount of education he had received, which was limited, but not defective. His countenance indicated a combination of pugnacity and shrewdness; he certainly did not exhibit the marked amiability of disposition so characteristic of fat people, but this trait appears to accompany physiological, rather than pathological, fatty development. He was very irascible, and subject to violent fits of temper. His right pupil was vertically oval, and there was a small opacity of the right cornea from an injury; the right pupil dilated freely, but gave him a peculiar expression. He had not been a great eater or drinker, nor had he had the means of indulging his appetite, had he been so disposed. His food at home had consisted chiefly of potatoes for dinner, and cake bread and tea for his other meals; he did not eat sugar, nor did he care for it; he was not of a lazy or indolent disposition, although since he had become embarrassed with the fat he passed a good deal of his time in sleep; nor was his fatness inherited as a family feature; his father was short and stout, but not all over fat; neither was his mother—the heaviest she had ever been was 11 stone. He was one of a family of 13, no other member of which exhibited this peculiarity. These matters were inquired into, because Dr. Chambers has remarked that hereditary predisposition is more decidedly marked in obesity than in any other disease, the proportion being—in insanity,

13 per cent.; in consumption, $24\frac{1}{2}$ per cent.; and in obesity, $84\frac{1}{2}$ per cent.

The explanation of this case which I would venture to suggest is, that when he arrived at the period of puberty, the developmental activity which would have been expended on the sexual system, having no outlet in this direction, owing to the arrested development of the testicles, was devoted to the formation of adipose tissue. He was, in fact, in the condition artificially produced in animals by the removal of the essential sexual organs. With this view of the case the prognosis could not be very favourable, but two indications appeared to suggest themselves as the only means of arresting a fatal issue—to lessen, if possible, the present accumulation of fat, and to restore the muscular activity. When this boy was in hospital, in February, 1874, I began to give him the liquid extract of the *fucus vesiculosus*, as recommended in cases of obesity by M. Duchesne-Duparc* in 1862. On that occasion he took it in drachm doses, given three times a day in mint water. While in the third week of this treatment he made his escape from the house, before sufficient time had elapsed for him to have derived any obvious benefit from the medicine. M. Duchesne-Duparc was led to adopt this remedy from observing its effects in obstinate psoriasis, for which its value had been much extolled. The psoriasis did not improve, but it was noticed that the patients who took this medicine became much emaciated, although they suffered neither from indisposition nor disturbed digestion; their flow of urine was much increased, and if the urine was allowed to stand a blackish layer formed on its surface. Although the structure and chemical composition of the different kinds of *fucus* (there are fourteen British species) are almost identical, M. Duchesne-Duparc insists that it is only the *fucus vesiculosus* which produces the effects mentioned. On the present occasion (April, 1875) his treatment was commenced by ordering twelve leeches to be applied under the left scapula for pain complained of in that region; only five of these could be persuaded to bite, owing, I believe, to the abundance of the volatile fatty acids given off by the skin. To remove these acids, and make his vicinity tolerable, he was next day got with great difficulty into a warm bath placed beside his bed. The buoyancy of fat persons was well illustrated by him while in the bath. Six leeches applied next day under the right scapula—all took well. He was ordered half-drachm doses of liquor potassæ in lime-water and milk three times

* Medical Times and Gazette, 19th April, 1862. P. 411.

a day. The first effect of the potash was to produce diarrhœa, and the medicine had to be omitted, as diarrhœa, for the reasons before mentioned, was a complication most fatiguing to the patient and irksome to his attendants. Prior to admission he had not been subject to the usual fluid stools of fat persons. The liquor potassæ was soon resumed, and shortly afterwards the dose was increased to one drachm three times a day. 26th April.—One drachm of the liquid extract of the *fucus vesiculosus* was added to each dose of the potash, viz.:—

R. Potas. liquoris	3j.
Liq. ext. fuc. ves.	3j.
Aq. calcis.	3vi.

Two tablespoonfuls in a cup of milk three times a day.

On 30th April the seaweed was omitted, as I wished to try the comparative value of the remedies, and during the whole month of May he continued on the liquor potassæ alone, which on the 6th was increased to a drachm and a half, and on the 15th to two drachms, taken regularly in milk three times a day. At the end of the month he began to dislike the taste of the potash, and, 30th May, he was ordered the extract of the *fucus* in drachm doses thrice daily, viz.:—

R. Ext. fuc. vesic.	3j.
Spt. chlorof.	3ij.
Tinct. aurant.	3ij.
Aq. menth. pip.	ad. 3viii. 3j. t. d.

He liked the taste of this much better. On 16th May he had an attack of iodism, which soon passed off, and he resumed the medicine, which was continued steadily till 4th August, with short intermissions when symptoms of iodism appeared; he never took more of it than three drachms in the twenty-four hours. While taking the liquor potassæ his bowels remained free, but they were usually confined while on the *fucus vesiculosus*, which is decidedly astringent from the large quantity of tannin it contains. He always felt the better of free action of the bowels; he used occasionally take a powder composed of pulv. jal. co. 3ss., pulv. elat. co. gr. iij. This latter, he said, was the best medicine he ever took, because it "took the weight out of his stomach." The liquor potassæ was given in milk, as the vehicle best suited to mask its taste; he did not complain of it. I tasted his dose of two drachms in a cup of milk, and it was not very disagreeable.

While taking three drachms a day the urine was found *acid*; total quantity in twenty-four hours, 37 oz.; spec. grav. 1.021, free from albumen.

His progressive improvement will be best indicated by noting briefly the increase in his movability. When admitted, 15th April, he could barely put his hands to his mouth; 17th, was able to turn on his back; 20th, could partly raise himself on one elbow, but panted much from the exertion; 26th, managed to work himself slowly out of bed without assistance; 27th, was able for first time to sit, with assistance, on a night chair. 2nd May, sat up in bed for the first time; 4th, able to creep round his bed holding on to it—not yet able to stand, even with help; 13th, had on his clothes for the first time; 15th, stood erect for a moment without support; 26th, able to walk across the ward, leaning with both hands on a stick; 30th, able to smoke, which he had not been for a year before admission. 12th June, able to walk the length of the corridor with a stick; 14th, got down stairs to the landing underneath, but had great difficulty in getting up again; 27th, got as far as the hall-door, from the top of the house; 29th, got out into the grounds. From this time on he was able to take daily exercise in the hospital garden; he was made do any light manual work which was suitable for him, but his breath failed him on any slight exertion. Before he left hospital he and a man with locomotor ataxy set out for a walk, and managed to get to the General Post Office and back safely—a distance of about three quarters of a mile each way.

The most remarkable part of the case, perhaps, is that he went out of hospital $1\frac{1}{2}$ lbs. heavier than he came in; he was 9 st. $2\frac{1}{2}$ lbs. on admission, and 9 st. 4 lbs. when he left. This is explained by his loss in fat being replaced by gain in muscle. The increase of muscle on the lower extremities was quite obvious in the change of shape of the gluteal regions and of the calves of his legs, and in his increased powers of standing, walking, and kicking; the grasping power of his hand, measured with the dynamometer, had almost doubled in the four months he was under treatment; the right hand had increased from 12 kilos. to 19 kilos. (from over 26 lbs. to nearly 42 lbs.), and the left from 13 kilos. to 22 kilos. (from over 28 lbs. to over 48 lbs.). He was weighed twice a week, every Sunday and Thursday, in one of Avery's machines, which, being on wheels, could be rolled over beside his bed, and in which he was seated on a chair when unable to stand. I always

considered that his difficulty in locomotion was due more to his muscular condition than to the weight of fat, and that this muscular atrophy had been induced principally by his long confinement to bed before admission. His absolute weight at any time may be considered small, but then his almost dwarfish stature—4 ft. 5 in.—is to be taken into consideration. In the fourteen months since he had been in hospital before, he had grown half an inch, and increased in weight $16\frac{1}{2}$ lbs. Enforced muscular exercise was an important part of his treatment as soon as he was able to move about, but the great excitement and distress of the respiration and circulation this always induced made me apprehensive of a rupture of one of the ventricles of the heart should this exercise be in any way pushed to an extreme. His very feeble pulse and occasional slight cedema of the feet suggested the possibility of a local sub-epicardial deposit of fat by its mere weight producing absorption and atrophy of the muscular structure, independent of fatty infiltration.*

When this boy was in hospital, in 1874, he was seen by Staff-Surgeon Boileau, who wrote to me, saying:—"I met with a similar case to that you have now in hospital in Canada, in all respects *ridiculously* similar—the whole aspect, manner, habit, and appearance of the two boys being identical, if such were possible. It was *manifest* in my Canadian case that the abnormal obesity started from a flogging administered to the boy when at school. I was assured by his parents that up to the time of that particular flogging he was 'like every other boy,' and I made particular inquiry into the case. The boy appeared to have been very severely and unusually beaten over the head and neck. He was known as 'the Staley-bridge Chicken.'"

Dr. Chambers, in the Gulstonian Lectures for 1850, observes that in the corpulent—speaking of those excessively so—the reproductive powers are by no means defective, some being very fertile and few barren. This remark can only apply to cases in which the corpulence is unconnected with atrophy of the testicles, and has not attained to such a degree as to render the subject incapable of the slightest exertion. In the case of a man^b aged forty-one, who died of fat, whose height was $5\frac{1}{2}$ feet, circumference 4 feet 10 inches, and weight 350 lbs. (25 stones), the penis and testicles were not larger than they are usually found in boys of seven or eight years

* Hayden. Dis. of Heart and Aorta. P. 608.

^b Brit. Med. Jour., 8th Feb., 1862. P. 144.

of age. Dr. Down* has reported a case of great obesity in a woman who had never menstruated up to the age of twenty-seven, and did not exhibit the slightest sexual instinct. She was 4 feet 4 inches in height, and weighed 210 lbs. (15 stones); he considered that the ovaries were undeveloped, and that she was in the condition of a sow that had been spayed for the purpose of fattening. Among other remedies Dr. Down used the extract of the *fucus vesiculosus* in doses of half-a-drachm three times a-day; he found it promote diuresis and a diminution of weight at the rate of four ounces and one-third a week. He considers that the results obtained from the *fucus vesiculosus* were such as to justify its being regarded as a safe, and to a certain extent effectual plan for diminishing obesity; but that it falls far behind what it is possible to effect by a purely animal diet, or as near an approach to such a typical diet as is possible in the treatment of these cases. The extract which I employed in this case was procured from Squire, of Oxford-street; it is a thick liquid of a dark-brown colour, with a harsh taste of iodine and leather. The price of this drug seems to vary in a remarkable manner, that offered by Squire being 5s. per lb., that by Rew, of Regent-street, 28s., and that by Ferris, of Bristol, 40s. per lb. It was given, as directed by Duchesne-Duparc, before meals or on an empty stomach; the boy was meanwhile kept as far as possible upon a meat diet. He was on the potash treatment for six weeks, and subsequently for more than nine on the *fucus vesiculosus*. He had made great improvement long before he was put on the *fucus*, but he did not at all recede when the potash was stopped and the seaweed substituted. I was unwilling to continue the potash treatment all through, for fear of deranging his digestion, and gladly availed myself of the opportunity of employing in the *fucus* a remedy which, though it may not possess all the power attributed to it, may be a most useful auxiliary to remedial agencies of a different kind.

It has been aptly observed that the subject of obesity has been treated more as a matter of curiosity than of true practical importance, and that cases have been collected rather to furnish amusement than to increase knowledge. A desire to escape the condemnation implied in this remark must be my excuse for having laid this case before the Society with more detail than it might appear at first to be deserving of.

* London Hosp. Reports. Vol. I., p. 97.

ART. XIII.—*The Treatment of Aneurism by Compression, illustrated by Notes of Two Cases.* By JAMES H. WHARTON, M.B. Univ. Dubl.; F.R.C.S.I.; Surgeon to the Meath Hospital and County Dublin Infirmary, &c.

EVERY contribution to the important subject of the treatment of aneurism must be of interest and value to the clinical surgeon. The case immediately following is of no small degree of interest, as exhibiting the value of the "Dublin method" under peculiar circumstances; pressure, for about 1,000 hours, having failed to procure consolidation of the contents of the aneurismal sac, prior to the admission of the patient to the Meath Hospital. It is to be observed that, while under treatment in the M. Infirmary, he was informed that, as pressure had proved unsuccessful, the femoral artery should be ligatured, whereupon he determined to come to Ireland to have the operation performed. The case was under the charge of Mr. F. H. Collins, to whose unremitting care the favourable issue is mainly to be attributed.

The second case, which is very briefly reported, is placed on record for the purpose of noticing an event not devoid of physiological and pathological importance in the treatment of aneurism—suppuration of the sac. The patient, to whom the case refers, was admitted to the Meath Hospital in July of the present year, just four years after he had been discharged cured on account of an abscess in the right popliteal space. This abscess evidently was connected with the chronic dissolution of the sac. The leg was considerably swollen, but pain was scarcely appreciable. The patient continues to work as a labourer, although the abscess is not healed, and the swelling of the limb is still present.

CASE I.—*Aneurism of the Left Popliteal Artery.* Under care of Mr. Wharton. Reported by Mr. F. H. Collins, practising pupil.

J. K., unmarried, aged thirty-four, was admitted to the Meath Hospital, Sept. 17th, 1875. He was a healthy-looking man, of stout build. He had lived well, but was always sober in his habits; never had syphilis or rheumatism; never took mercury; is a great smoker. His occupation (printing) often compelled him to stand for many hours and to lift heavy weights, which he usually rested on his left thigh, but never felt any pain from this habit. On 22nd December, 1874, he fell and sprained his wrist, but did not feel his

leg injured. Five weeks afterwards he felt a slight pain down the back of his left leg, and, about the same time, a pulsation behind the knee-joint. This continued to increase, and a swelling appeared on the upper and outer part of the calf of the leg, the joint became a little stiff, and the hamstring muscles contracted, so that he could not straighten the limb. He was able to walk up to the 10th April, 1875, though suffering great pain, when he was admitted to the M. Infirmary, under the care of Mr. L.

Pressure was applied to the femoral artery in such a way that a pulsation could always be felt in the tumour, and potassii iodidum was given internally.

He says "the tumour was at least one-third larger then than when he came under Mr. Wharton's observation."

According to his account, Mr. L.'s treatment was as follows:—

Pressure was applied 12 hours daily for 28 days, when the pulsation ceased, as he was informed by Mr. L., and the tumour became much less in size. He remained in bed for 14 days longer in perfect rest, the limb being bandaged. After this he sat up, and often hopped about on the right leg for 8 days, when the pulsation suddenly commenced again.

Pressure was reapplied for 21 days, quietness not being strictly enforced. It then was given up for 8 days, reapplied for 21 days, yet no further change occurred in the tumour.

He remained under Mr. L.'s care for some time longer—in all about 4 months. His impression is that "the pulsation never completely stopped."

On Sept. 17th he was admitted to the Meath Hospital. A tumour about 3 inches in length, from above downwards, presented itself at the outer and inferior part of the popliteal space of the left leg. It extended a short distance down the calf, behind the head of the fibula, fusiform in shape, with a strong pulsation quite apparent to the eye. A distinct *bruit* was heard on auscultation. Opposite the tubercle of the tibia, the limb measured $15\frac{1}{4}$ inches. On examination the heart and lungs were found healthy.

Treatment.—Perfect rest in the recumbent position on a firm bed. The limb was bandaged with flannel, slightly flexed, and laid on the outer side, so as to expose the course of the femoral artery, to which pressure was to be applied, with a view of preventing the slightest pulsation being felt in the aneurismal sac. Bowels to be opened by *haustus rhei*.

Sept. 18th, morning.—Slept well; bowels moved.

R. Acidi gallici, gr. 60.

Glycerini, q. s.

Ut ft. pil., xii. equales.

St. unam ter die.

Read's and Signoroni's tourniquets to be applied alternately throughout the day. Diet: broth, extra milk. Smoking allowed. Evening.—Temp. of foot, 97°; pulse, 84; pulsation in the tumour stronger. Pressure applied for 10 hours 50 minutes.

Sept. 19th, morning.—Slept well; pulse, 88. Pressure to be applied as before. Evening.—Temp. of foot, 97°; pulse, 84; tumour feels a little more solid. Pressure applied for 11 hours 30 minutes.

Sept. 20th, morning.—Did not sleep much, though he had 30 m. liq. opii sed. Limb measured 15½ inches; pulse, 90. Evening.—Signoroni's tourniquet could not be borne, so at 12 noon Hoey's clamp was substituted. Read's instrument has caused a good deal of irritation. Temp. of foot, 94°; pulse, 87; slight pain in the calf of the leg. Pressure applied for 12 hours.

Sept. 21st, morning.—Had a bad night; pulse, 72. Ordered haust. rhei. Evening.—Patient was very restless all day, which caused the instruments to shift very often, and he could not bear them long on the same spot. Unsatisfactory pressure applied for 12 hours.

Sept. 22nd, morning.—Slept well; pulse quick; bowels moved. Evening.—Read's instrument was removed, as the spot to which the pressure was applied appeared as if about to slough. Digital pressure was tried for about 2 hours, but could not be maintained on account of the large development of the thigh, and thus offering so much resistance. Applied Signoroni's tourniquet at the superior end of Hunter's canal. Slight pain about the knee and foot. Pressure applied for 12 hours.

Sept. 23rd, morning.—Had a bad night, though he had 30 m. of guttæ nigræ; headache. Evening.—*No pulsation* in the tumour. Pressure has been applied for 70 hours 20 minutes. A short time afterwards the pulsation began again. Slight pain in the leg and sole of foot. Pressure applied for 12 hours.

Sept. 24th, morning.—Slept well; bowels moved; pulse, 72; pulsation in the tumour very slight. Even should no pulsation be felt in the tumour, in the evening the pressure was ordered to be reapplied. Evening.—*No pulsation*. Pain in leg and foot. Pressure applied for 12 hours; pressure reapplied for 5 hours.

Sept. 25th.—No pulsation. Numbness and pain through the whole limb. Pressure applied for 12 hours.

Sept. 26th.—No pulsation. Starting pains through the leg. Slight pressure applied for 12 hours. Pressure applied *altogether* for 111 hours 20 minutes.

Sept. 27th.—No pressure to be applied except when going to stool. To remain in bed with perfect rest.

October 1st.—Foot feels much warmer, and very slight pain and tingling sensation in it.

October 4th.—Slight pain through the leg and foot occasionally.

October 10th.—Sat up in bed for the first time. Ordered $\frac{3}{4}$ ii. wine.

October 16th.—Continues well. Ordered a pint of porter.

October 25th.—May go about on crutches.

Chart of Pressure.

	Hours.	Minutes.
Sept. 18th, Pressure applied,	10	50
„ 19th, „ „	11	30
„ 20th, „ „	12	0
„ 21st, „ „	12	0
„ 22nd, „ „	12	0
„ 23rd, „ „	12	0
(N.B.—No pulsation for a short time.)		
„ 24th, „ „	12	0
(N.B.—No pulsation.)		
	82	20
„ „ Pressure reapplied,	5	0
„ 25th, Slight pressure for	12	0
„ 26th, „ „	12	0
	111 h.	20 m.

The tumour ceased pulsating after 82 hours 20 minutes of pressure.

CASE II.—Thomas Nolan, aged forty, labourer, admitted into the Meath Hospital on the 21st of June, 1871, suffering from popliteal aneurism of the right limb. He was a strong healthy man, and had lived a temperate life. His own history of his affection was that, about five years ago, he received a wound on

the inside of the knee from a bank of earth falling on him; since that time he had been subject to pain about the knee.

About a week before his admission he first noticed a pain in the instep. On last night, while turning in bed, he suddenly felt something give way on the back of the knee, and, on putting down his hand, noticed a pulsating tumour.

June 21st.—He was put to bed; his leg was bandaged, and the limb raised.

June 23rd.—Digital pressure was commenced at 10 o'clock a.m., and continued until 9 p.m.

June 24th.—Signoroni's tourniquet was applied this morning at 9 a.m.

June 25th.—An 8-lb. weight was to-day used alternately with Signoroni's instrument. These were changed about every fifteen minutes.

June 26th.—Read's tourniquet was put on to-day, and used alternately with Signoroni's.

June 28th.—Pressure was to-day kept up from 9 a.m. to 9 p.m. The tumour felt a little harder.

June 30th.—Pressure was kept up as before. The tumour was harder and more circumscribed.

July 1st.—Pressure was applied at 9 a.m. this morning. The patient complained of great pain about the knee during the night. The pressure was taken off at 9 a.m. Pulsation had then ceased. The tumour felt hard and very solid.

July 2nd.—No return of pulsation. The patient was still kept in bed.

July 6th.—Still in bed. Tumour smaller, and very hard.

July 22nd.—Discharged cured.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Lectures and Essays on the Science and Practice of Surgery.
Part II.—The Physiology and Pathology of the Spinal Cord. By
ROBERT M'DONNELL, M.D., F.R.S. Dublin: Fannin & Co.

THIS part of Dr. M'Donnell's work consists of three divisions—a critical essay on the physiology and pathology of the spinal cord, a new theory of nervous action as regards the transmission of sensation along the nerves, and a course of four lectures on physiology applied to practice.

At the outset the author states the circumstances which have eminently fitted him for the writing of such a work. He not only assisted Dr. Brown-Séguard in an extended series of experiments, and examined the bodies of the animals employed in these, but he has himself repeated these experiments, and extended the field of research in many new directions.

His utterances, therefore, on the many still doubtful subjects treated of in these essays must have all that weight which attaches to the personal observations of a well-trained investigator.

The opening essay is mainly occupied with an examination of the views put forward by Dr. Brown-Séguard in his well-known "Lectures on the Physiology and Pathology of the Central Nervous System."

With regard to the conduction of sensitive impressions, Dr. M'Donnell confirms the opinion of Brown-Séguard, that it takes place exclusively in the grey matter, and that the conductors decussate very shortly after their entrance into the cord. He has repeated the celebrated experiment of dividing the lumbar portion of the spinal cord longitudinally through the middle line, and finds that, as a consequence of this operation sensation is completely lost, while motion is but little impaired in the posterior limbs. This result, he thinks, disproves the view that the grey matter has the power of transmitting impressions in every direction. Still

there is a difficulty about the conduction of sensation in the cord, which is stated and explained by Dr. M'Donnell in the following passage:—

“Even though it be assumed by some that there are distinct conductors for various sensitive impressions, yet it appears certain that such conductors do not run in distinct bundles, along definite tracts of the spinal cord, any more than do the nerve-fibres seem to run in groups or distinct bundles, from the surface supplied by them, to the brain. Were it so, and admitting that sensitive impressions are mainly propagated along the grey matter, it would follow that certain injuries done to the grey matter, but not dividing it completely, would be followed by loss of some particular variety of sensation, or, in the other instance, by anæsthesia in particular patches of the surface from which the divided bundles of nerve-fibres would have come. But this is not what occurs. After lesion of the spinal cord, engaging more or less of the grey matter, sensibility is not completely destroyed in certain places, remaining perfect in other parts; but sensibility is diminished, and apparently equally diminished, in all parts posterior to the lesion, and this diminution of sensibility continues to become more marked the more the grey matter is divided, until, when the anterior columns alone remain, anæsthesia is established. Thus, while one is certainly induced to believe that the grey matter of the cord conducts sensitive impressions as a whole, and not as a nerve, by separate conductors coming from particular points, it is evident that the conductors in the spinal cord are not so arranged as to follow distinct channels, running in bundles, in continuation of the nerve-roots, nor does it seem probable that such is true for the conductors of pain, touch, tickling, &c. Indeed this, among other things, would incline one much more to regard the spinal cord as a nerve-tubule on a very large scale, than as a large nerve composed of many independent conductors, as has been the view of many. Looked upon as a gigantic nerve-tubule, the spinal cord may be considered as having in its investing membrane a structure analogous to the tubular membrane of a nerve-fibre; and in the white structure of the columns—*anterior, lateral, and posterior*—the structure represented by the white substance of Schwann; while the grey medullary substance takes the place of the axis cylinder. Of course this comparison merely serves to point out an ideal similitude; nevertheless, as it seems probable that the axis cylinder, encased and insulated as it is by the surrounding tunics, can be the means of conveying sensations produced by different means of irritation, so it seems that there is some reason to suppose that the grey matter conveys all sorts of impressions, and even also the orders of the will, to muscles.”

.In speaking of the vaso-motor nervous system, Dr. M'Donnell

considers the various theories which have been proposed to explain the vascular dilatation which sometimes follows irritation of certain nerves. He believes that the contraction and dilatation of the arteries are under the immediate influence of the peripheral parts of the nervous system, the ganglia, which are known to occur in such abundance in their coats and in the tissue adjacent. But these ganglia are subordinate to the central nervous system, and through it they can be stimulated or controlled in their action, and it is by an inhibitory action exerted on them, and not directly on the vessels themselves, that the dilatation of the latter is caused.

Much difference of opinion has prevailed as to the so-called muscular sense and the cause of the pain produced by cramp or spasm. It would appear that every time a muscle contracts a change in its galvanic state occurs, which may be demonstrated by a reoscopic frog's leg, whose nerve is laid on the contracting muscle; at every contraction of the muscle a secondary contraction is produced in the reoscopic leg. The more violent the contraction of the muscle the greater is the galvanic disturbance. This galvanic disturbance it is which is the irritant to the sensitive nerves of the muscles, and gives rise to the feeling of weight and to the other manifestations of the muscular sense. Unless the contractions be exceedingly violent, or the sensitive nerves be in a state of hyperæsthesia, there is no pain. But Brown-Séquard has shown that it is not necessary that the muscle should contract in order to cause the galvanic disturbance in question. If it be mechanically prevented from contracting, as by a suspended weight, it is found that every time it tends to contract a galvanic change is caused, which is so much the greater the greater is the resistance to the contraction, while if the tendon be cut, and all resistance removed, although the muscle contracts, no galvanic change occurs.

It is known that a hemisection of the spinal cord which causes anæsthesia of the opposite side behind the section causes hyperæsthesia of the side on which the operation is performed. This curious phenomenon seems to have a double cause—first, the partial division of the cord causes paralysis of the vaso-motor nerves on the same side, and consequently an undue vascularity of the surface. This alone is sufficient to cause hyperæsthesia; but beyond this the operation produces hyperæmia of the cord itself, and this condition usually betrays itself by hyperæsthesia of the parts which derive their nerves from the hyperæmic region. As an example of hyperæsthesia caused by peripheral vascularity, we have that

following the application of a sinapism, while the tenderness of the surface observed in the early stages of cerebro-spinal meningitis is a good example of hyperæsthesia due to central hyperæmia.

Great difficulty has been always felt in explaining the conduction of different kinds of sensation, and the views now generally held cannot be considered as satisfactory. According to these, there are distinct conductors for each kind of sensation, one set of fibres conveying impressions of touch, another of heat, another of tickling, and so on. Brown-Séquard enumerates, besides the four distinct kinds of conductors belonging to the higher senses, no less than eleven other kinds of fibres in the cord, brain, and nerves, and supposes that the number is much greater even than this.

Dr. M'Donnell proposes another theory of sensitive conduction which is far simpler, and seems to meet all the difficulties of the case much better than any of those previously put forward. We give this theory in his own words:—

“I conceive that the various peripheral expansions of sensitive nerves take up undulations or vibrations, and convert them into waves capable of being propagated along nervous tissue (neurility, as it has been well named by Lewes). Thus the same nerve-tubule may be able to transmit along it vibrations differing in character, and hence giving rise to different sensations; and consequently the same nerve-tubule may, in its normal condition, transmit the wave which produces the idea of simple contact, or that which produces the idea of heat; or, again, the same nerve-tubules in the optic nerve which propagate the undulations of red, may also propagate, in normal vision, those which excite the idea of yellow or blue, and so for the other senses.

“I advocate this undulatory theory of sensation in preference to the theory of distinct conductors:—

“1st. Because it is simple.

“2nd. Because it is strongly supported by analogy, when compared with wave propagations in other departments of science.

“3rd. Because it appears to be in harmony with a large number of recognised physiological facts, which seem inexplicable upon the theory of distinct conductors.”

We would recommend this part of Dr. M'Donnell's book as a good example of a lucidness in style and aptness in illustration, too often absent in physiological writings.

As an introduction to the course of lectures which concludes this volume, we find an eloquent defence of the practice of vivisection for purposes of scientific investigation and teaching. The

author distinguishes carefully between cruelty and the infliction of pain, and points out how futile the *cui-bono* argument is when urged against the pursuit of knowledge for the sake of knowledge.

The lectures which follow deal, for the most part, with the same subjects as those treated of in the opening critical essay. But the matter is handled differently to suit the requirements of the lecture theatre, and the statements made are freely illustrated by experiments. These lectures show how the most difficult subjects may be brought within the comprehension of a very junior student, and they will well repay the study of every teacher of physiology in our schools.

The first lecture is on the influence of the nervous system over the heart and blood vessels, and in it Dr. M'Donnell repeats on himself the painful experiment of plunging one arm into melting ice to demonstrate the reflex contraction thus caused in the vessels of the opposite hand.

The second lecture deals with the reflex phenomena of disease, explained through the influence of the nerves over the blood vessels.

The third is on the functions of the spinal cord and medulla oblongata; and the fourth is occupied with the explanation of the hyperæsthesia resulting from a division of a lateral half of the cord, of the sensation accompanying muscular contraction and the pain in cramp, spasm, &c., and with the artificial production and ætiology of epilepsy in animals.

Over this wide range of subjects the student is taken rapidly and easily. There is not one sentence which is beyond the comprehension of anyone possessed of the most ordinary intelligence, but there is no sacrifice of scientific accuracy, no shirking of difficult points. We have only to repeat that we look on these Lectures as models of what such discourses should be, and to express our belief that if we had more like them, the physiological teaching in our schools would not be in the disgracefully backward state in which it unfortunately now is.

A Dictionary of Chemistry and the Allied Branches of other Sciences. By HENRY WATTS, B.A., F.R.S., F.C.S. Second Supplement. London: Longmans, Green, & Co. 1875. 8vo., pp. 1,215.

IN 1872 the first supplement to Watts's Dictionary of Chemistry was published. The wonderfully progressive nature of this science is strikingly shown by the appearance of a second supplement only three years later. But this supplement is not like ordinary supplements; it is a huge volume of more than twelve hundred large pages of small type, in which there is abundant use of abbreviations and great condensation of description. The volume describes completely all that has taken place in chemical discovery and theory from the end of 1869 to the end of 1872, and some of the more important discoveries which have been made in 1873 and 1874. We find, however, that many important subjects, wholly or partly ignored in the Dictionary and its first supplement, are treated of at considerable length in the second supplement. For example, under the head of Fodder Plants we have a detailed account of the chemistry of these plants, and of the influence of various conditions affecting their developments, extending over a long period. The same observation applies to the article Root Crops, in which we find information available at the time when the Dictionary itself was published. Here we may remark that the only defect which we have been able to discover in this valuable work is the meagre and defective account which it gives of agricultural chemistry and phytology. On looking through this large volume the number of new compounds formed yearly by Continental chemists contrasts with the comparatively few discoveries made by British chemists. In Germany the progress of chemical discovery is something wonderful, by far the greater portion of the supplement being devoted to chronicling the doings of the numerous German chemists. In that country, however, science is encouraged by State endowments and by the establishment of magnificent public laboratories, and the investigators include many of the richest and noblest of the country—men who, like the Prince of Salm-Horstman, wholly devote their wealth and their leisure to the pursuit of science. It was not always that these countries did not contribute their fair share of chemical discovery to the general stock of knowledge on that important science. Early

in this century and the latter part of the last no part of the world produced greater chemists or made greater discoveries than Great Britain. Whoever is so fortunate as to discover an element is immortalised in the annals of science. The British chemists of from fifty to one hundred years ago discovered more than their fair share of elementary bodies. Priestley discovered oxygen; Rutherford, nitrogen; Cavendish, hydrogen; Wollaston, palladium and rhodium; Wood, platinum; Davy, boron, potassium, sodium, calcium, magnesium, strontium, and barium; Tenant, osmium and iridium. When the last discovery of an element had been made by a British chemist nearly one half of the then known simple bodies were associated with the names of British discoverers. Most of the important gases—such as carbonic acid, carbonic oxide, nitrous acid, nitrous oxide, muriatic acid, chlorous acid—were made known by English, Irish, and Scotch chemists. In Dublin the first successful attempt to isolate fluorine gas was made by Knox, and the curious and spontaneously inflammable phosphuretted hydrogen was first prepared in that city by Kirwan. In the early part of this century chemistry was a fashionable pursuit in these countries, as it has now become in Germany; and unless the science again becomes cultivated by men of leisure and wealth, we must continue to see the Germans keeping far ahead of us in exploring a domain of nature which hitherto has been found the richest and most wonderful into which the scientific investigator has penetrated.

In the present supplement we find no new generalisations of importance, and no change of notation or nomenclature, as compared with the previously issued volumes. The number of new platinum bases described is very large, and some of the names given to them very long, as, for example, *Oxyiodonitrate of Diplatinotetradiammonium* and *Iododiplatinotetradiammonium oxyiodide!* Our knowledge of the alcohols and ethers, and the great variety of bodies produced from them is considerably extended. Physiological chemistry, rather neglected in the preceding volumes, is treated upon at considerable length in this. There are also described several new compounds, in which the tetrad silicon replaces the tetratomus element, carbon. A chloride of silicon exists, resembling chloroform (chloride of carbon), and several other compounds of silicon appear to be the analogues of carbon combinations. As boron is a triad, it probably occupies the same relation to silicon as nitrogen does to carbon. We may probably at no distant date, have organic compounds, in which carbon is

replaced by silicon and nitrogen by boron. Ladenberg, indeed, suggests that silica is generally found in the ashes of plants; may-be partly derived from the combustion of silicon, which had partly replaced the carbon in the vegetable tissues. There is no department of animal chemistry which offers more interesting or promising results than the substitution of elements by others of the same atonicity—carbon by silicon, sulphur by selenium, nitrogen by boron, potassium by rubidium, and so on. The facts already recorded in Watts's Dictionary indicate that such substitutions are to be looked for in the immediate future.

St. Thomas's Hospital Reports. New series. Vol. V. Pp. 451.
London: J. & A. Churchill.

THIS volume contains twenty-two papers upon a variety of medical and surgical subjects. The medical staff of St. Thomas's have made good use of the material coming under their observation. Some of the essays are of great interest, among which we may mention the following:—"On the Mechanical Structure of the Cancellous Tissue of Bone," by W. W. Wagstaffe; "Notes on the Treatment of Burns and Scalds," by Francis Mason; "Report on Cases of Pneumonia," by Thos. B. Peacock; "On the Action and Use of Aconitia," by John Harley. There are numerous well-executed illustrations.

Illustrations of Clinical Study. By JONATHAN HUTCHINSON,
F.R.C.S. London: J. & A. Churchill.

MR. HUTCHINSON is known to the profession as one of the most versatile writers in this country. There are few men who have contributed so much, and at the same time gained an audience so uniformly respectful. He is a good surgeon, a sound thinker, and a most pleasing writer. The project in which he is at present engaged is the publication of a number of fasciculi of plates, photographs, woodcuts, and diagrams, illustrating surgical diseases, symptoms, and accidents, and operative and other methods of treatment. The first number consists of four plates, representing frontal encephalocele, ivory exostosis of the orbit, Jacob's ulcer, and different varieties of chancre. There is accompanying descriptive

letterpress, very lucid and sufficiently full. The plates are admirably executed. The publication is cheap, and we most strongly recommend all who have not the opportunities of referring to hospital collections to provide themselves with this most excellent publication.

RECENT WORKS ON PARALYSIS.

1. *Des Paralysies Bulbaires.* Par le DR. HALLOPEAU. Paris: J. B. Baillière et Fils. 1875. 8vo, pp. 152.
2. *Des Contractures.* Par le DR. ISIDORE STRAUS. Paris: J. B. Baillière et Fils. 1875. 8vo, pp. 93.
3. *De la Localisation dans les Maladies Cérébrales.* Par le DR. R. LÉPINE. Paris: J. B. Baillière et Fils. 1875. 8vo, pp. 160.

THESE three works are theses "présentées au concours pour l'agrégation" of the Faculty of Medicine of Paris. In such essays we cannot look for much original matter, for Dr. Lépine tells us that the rules of the Concours allow only twelve days for the writing and printing of the thesis, the subject of which is not chosen by the author, but assigned to him by lot. Nevertheless, in the works before us, and in others of the same class, we find much that is well worthy of perusal; the arrangement of the matter is generally excellent, the information exact and derived from the most recent sources, and many valuable cases, before unpublished, are detailed with a fulness and accuracy too often absent in English medical records.

M. Hallopeau, after an introductory chapter, gives a sketch of the anatomy of the medulla oblongata, which is illustrated by figures borrowed from the article of M. Farabeuf in the *Dictionnaire Encyclopédique des Sciences Médicales*. An admirable chapter on the pathological physiology of the bulb follows. The paralyzes of bulbar origin are divided into three groups—1st. Those caused by lesion of the nuclei of origin or of the roots of the nerves which arise from the medulla oblongata itself; 2nd. Those caused by lesion of the nerve-fibres which unite the cerebral ganglia with the spinal cord, and which traverse the medulla oblongata; and 3rd. Those which result from lesion of the fibres which unite the cerebral ganglia to the *bulbar* nuclei. The paralysis in the first and third

groups is limited to the muscles supplied with nerves from the medulla oblongata, but in the second group it affects the muscles supplied from the spinal cord. The paralysees of the first group are characterised (1) by being seated on the same side as the lesion; for the nuclei of origin, the fibres, and the apparent origin of the bulbar nerves, are contained in the same half of the bulb; (2) by the loss of reflex as well as voluntary movement; because the communication between the muscles and their centre of innervation is destroyed; and (3) by atrophy of the muscles affected; for it has been demonstrated that, not only in the spinal cord, but also in the medulla oblongata, lesion of the nerve-cells of origin of the motor nerves is followed by atrophy of the corresponding muscles.

In the paralysees of the second group voluntary movement alone is lost, reflex movements persist, and the nutrition of the muscles does not suffer. It is not so easy to say whether the paralysis is seated on the side of lesion or crossed, because the full extent of the decussation of motor conductors is not accurately known. That all the motor fibres do not cross at the decussation of the pyramids is shown by an experiment of M. Vulpian, who made a longitudinal section of the bulb in the middle line through the decussation of the pyramids, so as to divide completely the bundles passing from side to side. If all the motor conductors crossed at this part of the bulb, the operation must have been followed by complete paralysis of all the limbs, but such was not the case; the animals were able to perform voluntary movements, and even to stand up for a short time. Further, M. Vulpian has twice seen in man complete atrophy of one anterior pyramid—in one case there had been during life no paralysis, in the other the lower extremities only had been affected. M. Hallopeau, too, gives a case in which a lesion of a lateral part of the bulb caused paralysis of the limbs of the same side. These experiments and observations show that the influence of the bulb on the spinal cord is not, like that of the corpus striatum, altogether crossed, but in great part direct.

The history of the third form of bulbar paralysis has not yet been fully worked out, but, from our knowledge of the anatomy and physiology of the parts concerned, it would appear that, like those of the first class, it is limited to the muscles supplied from the bulb, but is distinguished by absence of muscular atrophy and by preservation of reflex movement. It would further appear, from the experiments of Vulpian, that in animals the action of the cerebral ganglia on the nuclei of the bulb is not altogether crossed,

but to what extent it is so in men is as yet quite unknown, and can be made out only by a careful observation of cases of disease.

Corresponding to these three classes of bulbar paralysis, we can conceive three groups of anæsthesia of bulbar origin—1st. Dependent on lesion of the nuclei or fibres of origin of the sensitive nerves; 2nd. On lesion of the sensitive conductors which pass between the brain and cord, and which traverse the bulb; and 3rd. On interruption of the communication between the brain and the origins of the sensitive nerves in the bulb.

Besides producing anæsthesia or paralysis, lesions of the bulb may cause disturbance of the organic functions, and in this way they frequently lead to the most serious results. Deglutition, respiration, the movements of the heart and arteries, the secretions of urine and saliva, may be variously affected according as the lesion is of a paralysing or of an irritative nature.

In the second part of his thesis M. Hallopeau deals with the pathogeny and symptomatology of bulbar paralyses. He treats first of paralysis due to primary chronic atrophy of the motor nuclei. The type of this is the disease described by Duchenne as labio-glosso-laryngeal paralysis. He shows that this is identical in its nature with progressive muscular atrophy, the one being caused by atrophy of the motor cells in the medulla oblongata, the other by similar atrophy of the cells in the anterior horns of grey matter in the cord, their identity being further demonstrated by their frequent co-existence. The author objects to the name of labio-glosso-laryngeal paralysis being given to those cases in which the bulbar nuclei are affected secondarily, as by tumours, softening, sclerosis, compression, &c., and thinks that the term should be confined to those cases in which the disease is primarily seated in the nuclei themselves, and leads to atrophy of the nerve-cells.*

After the primary atrophy of the bulbar nuclei, the author considers the secondary atrophies, which are produced by the propagation to the grey substance of inflammatory lesions. These include the different forms of sclerosis—viz., lateral amyotrophic sclerosis, general spinal paralysis, sclerosis in disseminated patches (*sclérose en plaques disséminées*), and hypertrophic cervical pachymeningitis. The sclerosis of general paralysis also sometimes involves the bulb.

* It is proposed, further, to unite labio-glosso-laryngeal paralysis and progressive muscular atrophy under a common title—namely, primitive chronic atrophy of the motor nuclei.

Lateral amyotrophic sclerosis and general spinal paralysis resemble each other in sometimes affecting the whole length of the bulb and cord. They cause generalised muscular atrophy, much resembling that of progressive muscular atrophy, and various disturbances of motility. Bulbar phenomena are scarcely ever absent in lateral sclerosis, but are only exceptionally met with in general spinal paralysis.

Anatomically, lateral amyotrophic sclerosis is characterised by symmetrical sclerosis of the lateral columns of white matter, and sclerous atrophy of the anterior grey horns, with atrophy of the nerve-cells.

As we believe this form of disease is little known in this country, we quote the following résumé of its clinical characters, as given by M. Charcot, who has done most to elucidate its pathology:—

“1. Paresis without anæsthesia of the superior limbs, accompanied by rapid wasting of the muscles, and preceded sometimes by numbness and formication. Spasmodic rigidity affects at a certain period the atrophied and paralysed muscles, and determines, by their contraction, permanent deformity.

“2. The lower limbs are, in turn, attacked. First there is produced, without anæsthesia, a paresis, which, rapidly getting worse, makes in a short time walking or standing impossible. To these symptoms is joined a spasmodic rigidity, at first intermittent, then permanent, and complicated sometimes by tonic spinal epilepsy. The muscles of the paralysed limbs atrophy only at a late period, and never to such an extent as do those of the upper extremities. The bladder and rectum are not at all affected, and there is no tendency to the formation of bed-sores.

“3. A third period is constituted by the aggravation of the bulbar symptoms.”

These resemble those observed in labio-glosso-laryngeal paralysis, and are due to disease affecting the same parts of the medulla oblongata; but while in Duchenne's disease the bulbar lesion is primary, in lateral sclerosis it is secondary to the disease in the cord.

Disturbances of speech and deglutition, due to paralysis of the tongue, are first noticed, then paralysis of the parts supplied by the laryngeal and lower parts of the facial nerves. Death occurs either by dyspnœa or by disturbances of circulation (syncope), due to extension of the disease to the origin of the pneumogastric.

General spinal paralysis usually sets out by disseminated paralysees, which soon become complicated, with loss of electric contractility and muscular atrophy. It may affect primarily either the superior or inferior limbs, and may engage only a few muscles or the entire extremity. It pursues a remarkably irregular course, and presents sudden aggravations, followed by gradual improvement, which in one case has been permanent. The prognosis is, therefore, better than in other forms of myelitis. It is distinguished from lateral amyotrophic sclerosis, in a clinical point of view, by the absence of contraction of the paralysed muscles, and by the abolition of electric excitability; in an anatomical point of view, by the diffusion of the lesions which involve not only the anterior horns, but also the peri-ependymar tissue, and also frequently the antero-lateral white substance. As already mentioned, the bulbar symptoms are less frequent in this disease than in lateral sclerosis. Duchenne has observed two cases in which there was some difficulty in articulation, deglutition, and mastication, but Cornil and Lépine have published a case with the autopsy (quoted by Hallopeau), in which the bulbar symptoms were exceedingly marked, and resembled those observed in labio-glossolaryngeal paralysis, and were caused by extension of the inflammatory lesion to the nuclei of the medulla oblongata, and atrophy of their motor cells.

The disease of the nervous centres, called by French writers "*sclérose en plaques*," is now pretty well known. Anatomically it is characterised by the presence in the nervous centres of greyish, well-circumscribed patches, of variable size and thickness, and of firmer consistence than the parts which they have replaced. They are produced by a localised hyperplasia of the neuroglia, which, by pressure, causes atrophy of the nerve cells and fibres. The cells undergo a peculiar pigmentary degeneration prior to their disappearance, and, according to Charcot, the atrophy of the fibres is not complete, as the axis cylinders persist in the sclerosed patches. The medulla oblongata is a favourite seat of this kind of lesion, which may affect various parts of the bulb, but appears to select by preference the floor of the fourth ventricle. If the patches in this situation extend to any depth, the nuclei of the bulbar nerves must suffer. That of the hypoglossal is most commonly affected, then the facial and pneumogastric, more rarely the glossopharyngeal, and in one remarkable case the nucleus of the auditory nerve was involved. The destruction of the nuclei and nerve-roots is, however,

less complete than in primary atrophy (labio-glosso-laryngeal paralysis), for the functional disturbances are much less marked, and muscular atrophy does not occur.

The most prominent symptom in this form of disease, when it involves the bulb, is difficulty in articulation, due to weakness of the tongue and lips. Besides the paresis of these parts, a trembling is observed, most marked when the patient protrudes the tongue. More or less paralysis of the lower facial muscles also occurs, mastication may be difficult, and deglutition from paresis of the muscles of the jaws, palate, pharynx, and œsophagus. Great feebleness of voice is sometimes noticed. In all these symptoms it is not complete paralysis, but only feebleness, more marked the longer the disease has lasted. Lesions of sensibility occur, facial neuralgia from implication of the descending root of the trigeminus, anæsthesia and disturbances of the special senses. Cardio-pulmonary symptoms, dyspnœa, cough, feebleness of heart, syncope, due to implication of the pneumogastric, and occurring in paroxysms, usually carry off the patient.

The bulbar lesions occurring in spinal meningitis, and in general paralysis of the insane, have been less studied. In the latter disease Magnan and Mierzejewski have shown that the ependyma of the fourth ventricle is specially affected, and that the inflammatory lesions may extend so deeply as to involve the origins of the bulbar nerves.

The next chapter treats of localised lesions of the bulb (*Des paralysies symptomatiques de foyers bulbaires. Hémorrhagies et ramollissements*).

The author thus sums up the symptoms of these rare lesions:—*"The disease commences suddenly, generally without loss of consciousness, by paralysis which affects especially the tongue, the lips, and the limbs. It is frequently more complete on one side of the body than on the other; is sometimes accompanied by anæsthesia. The upper part of the face is unaffected. A sensible amelioration of the symptoms soon occurs, which may be permanent; more frequently, however, the symptoms recur. Death may occur in the first attack or in the subsequent aggravations."*

The remaining chapters treat of tumours and traumatic injuries of the bulb, and of bulbar paralyzes without definite lesion, as those which follow diphtheria and some other acute diseases.

The last part deals with the symptomatology and diagnosis of bulbar paralyzes.

This admirable essay contains the details of fifty cases, and is illustrated by one lithographic plate.

Dr. Straus defines the subject of his thesis as follows:—" *La contracture* is a tonic contraction, *persistant* and involuntary of one or of many muscles of animal life." The chief points to be noticed are—1st. That the contraction is active, not a mere passive retraction from degeneration of the muscle into fibrous tissue; and 2nd. That it is persistent, which distinguishes it from tonic convulsions and cramps.

Contractures are studied under the following heads:—

1. Contractures associated with disease of the cerebro-spinal axis.
2. Hysterical contractures.
3. Contractures associated with disease of the muscles and nerves.

Partial contractures.

4. Reflex contractures.
5. Contractures in disease due to an intoxication or errors of diet, as ergotism, acrodynia, scurvy.
6. Tetany, or essential contraction of the extremities.

Many authors have written on the contractions which so frequently accompany hemiplegia, and which affect the paralysed limbs, but Todd was the first who made this phenomenon the basis for a classification of hemiplegias. He divided them into three classes, according to the condition of the paralysed muscles. In the first, the muscles remain flaccid; in the second, they become rigid and contracted immediately or very shortly after the attack; while in the third class, which is the most common, they remain flaccid for a time and then become affected with progressive and permanent rigidity.

We find here a division of hemiplegic contractions into early and late, but both of these were supposed by Todd and his followers to depend on an irritative process having its seat in the encephalon, and due either to the penetration of the effused blood into the ventricle or under the arachnoid, or to an encephalitis developed around the clot. We shall see, however, that this view is not tenable for the late form of contractions, which are distinguished from those occurring at an early period not only clinically, but also by their pathological anatomy and physiology.

The rigidity that occurs with, or very shortly after, an attack of cerebral hemiplegia affects chiefly the muscles of the upper extremity, flexors as well as extensors, and fixes chiefly the elbow-joint. It

may affect the muscles of both sides of the body, even when the lesion is seated on one side only, and is often accompanied by partial or general epileptiform convulsions. It is more frequent in hæmorrhage than in softening (embolism), and it would appear from the researches of Durand Fardel, and Charcot, that these early contractions and convulsions depend almost always on the penetration of the blood into the ventricles or into the sub-arachnoid space. They never occur when the hæmorrhage is confined to the white substance or to the opto-striate ganglia. Hæmorrhage into the pons Varolii, the cerebral peduncles, or the bulb, may cause convulsions, although the blood does not reach the surface; in these cases the contractions are usually bi-lateral, but most marked on the paralysed side. When convulsions occur they begin always in the paralysed limbs. Cases in which early convulsions or contractions occur rarely get well; death is usually rapid. Hence this symptom is valuable in prognosis and in diagnosis both of the seat and nature of the cerebral lesion. The rotation of the head and eyes, not unfrequently noticed in hemiplegics, is looked on as a peculiar form of contraction, reproducing in a slight degree the circus or rotatory movements which follow certain injuries to the brain in animals.

Dr. Straus gives an excellent account of the contractions which supervene at a late period after an apoplectic attack. The symptoms of this complication are so well known that it is unnecessary for us to reproduce here his account. But since the date of Todd's lectures the opinion of pathologists has undergone a great change as to the nature of these late contractions. They are now believed to depend not on an encephalitis developed about the cerebral lesion, but on the secondary degeneration of the spinal cord. This degeneration, described by Cruveilhier, has been studied since by numerous observers, the most prominent of whom is, perhaps, Bouchard. The secondary degeneration does not follow lesion of the cortical part of the brain, is rare when the disease is seated in the optic thalami or white substance, most common when it involves the corpus striatum or the band of white fibres which separates its two nuclei. The degeneration extends through the peduncles and pons on the side of lesion, affects the anterior pyramid of the same side, crosses at the decussation of the pyramids, and extends to a variable distance down the cord, affecting the posterior part of the lateral column of the *opposite* side. As is known, the decussation of the pyramids is not complete, and, corresponding to this anatomical fact, the degeneration may involve both sides of the cord, and then

affects the posterior part of the lateral column of the opposite side and the inner part of the anterior column of the same side as the brain lesion. The degenerated parts have a greyish colour, and diminished consistence and volume. The change commences about ten or twelve days after the attack, and consists, first, in a fatty degeneration of the blood capillaries, and the appearance of numerous granular corpuscles among the nerve-fibres. Then the nerve-fibres undergo segmentation and fatty degeneration, and they are separated from one another by a soft, juicy, nucleated tissue. Later the nerve-fibres have almost completely disappeared, and are replaced by a delicate, finely-reticulated connective tissue. By the end of two or three months the process is generally complete, and it is at this period that the contractions appear. The degenerations are not due, as was at first supposed, to separation of the fibres from their trophic centres, but are caused by an inflammatory process. In primary spinal affections similar degenerations are observed, ascending from the seat of lesion along the inner part of the posterior columns, descending along the posterior part of the lateral columns. In all these cases contractions occur, and contractions are never observed except where such degenerations exist; hence it is impossible not to connect the anatomical lesion and the functional disturbance as cause and effect.

Our space will not allow us to notice the other chapters of this essay; we can, however, recommend the work as giving a very good account of the subject with which it deals.

The subject of the thesis of Dr. Lépine is one which, in the present condition of science, is of the very greatest interest. The researches of Hitzig, Ferrier, Carville, and Duret, &c., have opened a new field for investigation, not only to physiologists but also to pathologists, for it is only by the latter that it can be shown whether the results gained experimentally on animals hold good for men. It is most important that all those who have the opportunity of observing cases of cerebral disease should know what has been done recently towards the localisation of function in the different parts of the brain, in order that they may, by their own observations, confirm, complete, or refute the experimental results. To all such the work of Dr. Lépine will prove very useful, as it gives in a short compass and with admirable clearness a *résumé* of all the recent researches on the localisation of brain function. He also shows, by the record of numerous cases, how these researches

may be applied in diagnosis. A very extensive list of writings on cerebral physiology and pathology is given in the appendix, and, in most cases, the name of the paper is accompanied by a short abstract of its contents. This is a most valuable part of the essay. The work is illustrated with two plates.

RECENT WORKS ON ELECTRO-THERAPEUTICS.

1. *Cases of Hysteria, Neurasthenia, Spinal Irritation, and Allied Affections.* By GEO. M. BEARD, M.D. New York.
2. *The Treatment of Marasmus, Whooping-cough, and Debility in Children, by Electricity.* By G. M. BEARD, M.D.
3. *The Relation of Electro-Therapeutics to Electro-Physiology.* By A. D. ROCKWELL, M.D.
4. *The Electrolytic Treatment of Cancer.* By A. D. ROCKWELL, M.D.
5. *Observations in Electro-Therapeutics.* By A. D. ROCKWELL, M.D.
6. *Electricity as a Restorative Agent in Narcosis and Asphyxia.* By J. J. CALDWELL, M.D.
7. *Archives of Electrology and Neurology.* Edited by G. M. BEARD, M.D. Nos. I. and II.
8. *Traitement des Kystes Séro-sanguins du Cou par l'Électricité.* Par DR. A. AMUSSAT, fils.
9. *A Practical Description of every Form of Medico-Electric Apparatus in Modern Use, with Plain Directions for Mounting, Charging, and Working.* By SALT & SON. J. & A. Churchill. 1875. Pp. 66.

WE have received from time to time a number of American pamphlets on medical electricity, and, after looking over them, we are constrained to say that their scientific value is very small, and are unable to find that they contain any reliable addition to our knowledge. The cases are loosely related, are so scant and vague in their details as to be quite useless, and there is far too much of that vicious habit of reporting cases before their termination had been observed. These pamphlets are precisely the kind that discredit electro-therapeutics by advancing extravagant claims for electricity based upon shadowy speculations, and supported by inexact clinical observations.

The Archives are a more pretentious publication, and contain abundance of matter, with some cases of interest.

There is nothing in them that calls for particular remark in the department of electricity, but in No. II. Dr. Bulkley gives a full and interesting *résumé* of what is known of the relations of the nervous system to diseases of the skin, under the heads of—microscopic anatomy of the skin, with special reference to its nerve-elements; physiological considerations pointing to nerve-origin of certain skin diseases; and, lastly, pathological observations in confirmation of the same.

Dr. A. Amussat narrates a case of sero-sanguineous cyst, of eleven years' standing, in the neck of a man aged sixty-nine, in which he effected a cure by means of one application of the galvano-caustic wire. In another case, a cyst in the neck of a lady, aged twenty-four, was completely cured after forty-five (!) electrolytic applications, coupled with the local use of tincture of iodine.

The last publication on our list is essentially a trade catalogue of the principal, but certainly not of every form of medico-electric apparatus in modern use. It is well brought out and freely illustrated, and the directions for managing the various batteries are plainly and intelligibly described. It does not, however, contain anything novel, or beyond what is to be found in good text-books on the subject—for example, in the third edition of Dr. Althaus' work, in which full illustrated descriptions are supplied. Messrs. Salt offer one practical caution, which we commend to every practitioner who has, or intends to have, any sort of electric instrument, viz:—"Cleanliness is the very essence of success in all applications of electricity, and the absence of it gives rise to more disappointment and annoyance than every other cause of failure put together."

Lectures on Nursing. By W. R. SMITH. London: J. and A. Churchill. 1875. Pp. 228.

THOSE physicians and surgeons who have the most experience will be the first to acknowledge the incalculable blessing a well-trained and intelligent nurse is, both to patient and doctor, in any serious or prolonged illness. The most skilful practitioner must often conscientiously feel that to good nursing, and not to medicine, many a

one under his care has been indebted for his recovery. We should, therefore, hail with satisfaction any attempt which has for its object the training of medical and surgical female nurses, as well for hospital as for private work. In England both hospital authorities and private individuals seem more alive to the utility and necessity of the establishment of efficient training institutions for nurses than we are in this country. Any one who has witnessed the intelligent and methodical system of nursing and training of Probationers, as now carried on in many of the London hospitals, must feel regret that, with some special exceptions, in the hospitals in this city and throughout Ireland generally no use is made of the opportunities they afford of enabling many women to obtain the knowledge requisite to fit them for earning respectable livelihoods; or, to those of a higher social status, of becoming members of some sisterhood, or similar institution, wherein they might find a mode of utilising their unprofitable and oft-times irksome lethargy for their own good and that of their fellow-creatures.

To persons interested in the practical training of such nurses Mr. Smith's work will offer many useful hints. It consists of twelve lectures, as delivered by him to the Nursing Staff of the Royal Hants County Hospital, of which institution he is the Resident Surgeon. The lecturer gives a clear description of the manifold duties a nurse may have to fulfil, and of the mode in which they should be done. He is justly most particular in insisting upon the observance of punctuality, cleanliness, regularity, consideration, and method, in everything connected with her occupation, and of always endeavouring to exercise intelligence and tact in its performance. With the praiseworthy intention, doubtless, of further developing such intelligence, Mr. Smith has devoted a large portion of his Lectures to an exposition, illustrated by several woodcuts, of the anatomy and physiology of the heart and lungs; the circulation of the blood; the structure of the heart and of its valves; the normal and abnormal cardiac sounds, and the minute structure and chemical composition of bone. An acquaintance with such subjects as we have enumerated is, however, in our opinion, quite unnecessary for the class of persons for whom the Lectures are intended, and altogether out of place in any book on nursing. Two of Mr. Smith's best lectures are those on the nursing of sick children.

PART III.

HALF-YEARLY REPORTS.

REPORT ON SURGERY.

By WM. THOMSON, A.B., M.D., and Ch.M., Q.U.I.; Fellow and Member of the Surgical Court of Examiners, Royal College of Surgeons, Ireland; Surgeon to the Richmond, Whitworth, and Hardwicke Hospitals.

1. ANTISEPTIC SURGERY.
2. THE STATISTICS OF AMPUTATION.
3. THE CORPUS MORGAGNI WITH REFERENCE TO DISEASES OF THE TESTICLE.
4. THE TREATMENT OF ANEURISM.
5. ON EXTIRPATION OF THE LARYNX.
6. SYPHILITIC BUBO.
7. PULSATING TUMOUR OF THE LEFT ORBIT.

ANTISEPTIC SURGERY.

PROFESSOR VOLKMANN, of Halle, has practised the antiseptic treatment of wounds, as advocated by Lister, and gives the results of his experience in a recent paper,* recording the results of two cases of osteotomy for bony ankylosis of the knee-joint. He observes that "the justification of operations like these undoubtedly depends entirely on the possibility of guaranteeing a successful termination. We believe that we are not assuming too much in saying that we have by degrees attained sufficient practice and experience in the antiseptic treatment of wounds to be really able to promise such a result with certainty." Up to the date at which the paper was written two years had elapsed since the introduction of the method into Volkmann's clinique. During that time no single patient suffering from a compound fracture in which conservative treatment was attempted had died. Thirty-one compound fractures were treated without a fatal result. Amongst these were

* Edin. Med. Journal. March, 1875.

nineteen of the leg, with great bruising and laceration of soft parts. There were two compound comminuted fractures of the patellæ, both of which recovered with movable joints. No case of pyæmia had occurred since July, 1873, although about sixty major operations had been performed. In thirteen cases of osteotomy ten cases recovered without any suppuration at all, and the others with the most trifling amount possible.

Referring to this subject, in his Address to the British Medical Association at Edinburgh,* Professor Spence observes that the method is being pressed in some quarters to the exclusion of conditions which he deems to be of equal, if not more, importance in the treatment of wounds. The statement that "the antiseptic method is to be regarded as one of the most important contributions to modern practice, inasmuch as it makes wounds heal by first intention, instead of going through the painful process of granulation and suppuration," he can only regard as arising from want of experience in, or misrepresentation of, the simple method of treating wounds, for assuredly healing by granulation is neither the object, nor yet the general result, of that treatment. Suppuration is not unknown under the antiseptic method, while the average duration of treatment is certainly not lessened. He objects to the mention of selected brilliant results. These will be shown under any treatment; nor will it do to state that no deaths from pyæmia have occurred under the system. At one time that term was never met with in the bills of mortality, and it is rapidly disappearing now. He wishes for accurate statistics indicating the nature of the disease or injury, and the cause of death. At present all is assertion, or reference to special cases, or to the not very definite statistics of foreign hospitals, and it is not a little curious that we hear of most of the success from abroad. A reference to his own statistics of operations for three years, treated on the simple plan, shows that out of sixty-three major amputations for disease there were only three deaths; and of twenty-three cases of excision only two, at a time when the treatment consisted in thoroughly cleansing the cut surface by pouring tepid water over it, and occasionally applying tincture of iodine, alone or diluted, on the flaps; whilst the dressing consisted merely in laying a veil of lint or thin muslin over the stump.

The newest antiseptic is salicylic acid, which has received high commendation from many surgeons in the treatment of wounds.

* Brit. Med. Journal. Aug. 14, 1875. P. 197.

At a recent meeting of the Clinical Society of London, Mr. Callender submitted the notes of a few cases, in which he had used solutions of this material.* The preparations employed were chiefly these:—(a.) Phosphate of soda, three parts; salicylic acid, one part; water, fifty parts: (b.) Salicylic acid, one part; olive oil, forty-nine parts: (c.) Salicylic acid, one part; bicarbonate of soda, half a part; water, one hundred parts. It was occasionally used combined with borax, or in the form of an ointment, with prepared lard. A combination of acid, mastic, and spirits of wine caused great irritation, and was abandoned. In three cases in which the acid was used a vesicular eruption was caused, and in another there was great local irritation. In an excision of the elbow-joint the wound was washed with the salicylic acid, and was dressed with solution (a.) on Japanese paper; there was considerable discharge; the granulations were pale and flabby. In two cases there was rapid healing of the wounds. Mr. Callender finds that the acid is acceptable to patients, being free from odour. The wounds were kept free from bad smell, and unless strong with spirit or but little diluted, the acid did not cause local pain. Above the strength of two per cent. it caused local irritation, with some constitutional disturbance. There was more discharge from a wound dressed with salicylic acid than from one dressed with carbolic acid. It did not appear to be as efficacious in preventing decomposition in recent wounds as boracic acid, carbolic acid, or chloride of zinc. The repair of the wound was less active than when other antiseptics were employed. Mr. Callender, on the whole, does not think salicylic acid deserves the recommendations it has received.

THE STATISTICS OF AMPUTATIONS.

A statistical paper which is of some interest as bearing upon the question of hospitalism, appears in the *Glasgow Medical Journal* from the pen of Dr. Moses Thomas. The figures are taken from the records of the Glasgow Infirmary, the only general hospital for the reception of patients in that city. Returns for the period from 1794 to 1838,^b and from 1838 to 1849,^c have already been published. Dr. Thomas completes the history up to the close of the year 1873. There are three buildings—one for medical cases, one

* Brit. Med. Journal. October 16, 1875. P. 510.

^b London Med. Gazette. 1840.

^c Edin. Med. Journal. 1849.

for accidents, and one for chronic surgical cases, with special wards for burns, erysipelas, and pyæmia. In the accident wards each patient has 1,000 to 1,500 cubic feet of space; in the chronic surgical wards, 900 to 1,000 cubic feet. There is cross ventilation, and the heating is effected by open fire-places. During the last 25 years, of which the statistics are before us, there were 1,412 amputations of which 960 recovered, or 67·9 per cent., and 452 died (32·1 per cent.) This is a decrease of 4 per cent. on the first period and of 10 per cent. on the second. In 657 primary amputations there were 240 deaths, or 36·5 per cent. In the first period the mortality was less in amputations of the forearm, hip, and foot, but the number had greatly increased, as will be seen from this comparative statement: forearm, 15—112; hip, 1—7; foot, 2—40. Of the four major amputations—arm, forearm, thigh, and leg—the numbers in the three periods were 72, 169, and 473, with a mortality of 51·3, 36·6, 35·8 per cent.—a rather favourable statement, as compared with Mr. Erichsen's statistics, which show 48·6 per cent. of mortality in primary amputations in four large London hospitals. Of the secondary amputations the numbers stand thus in the three periods—46, 56, 172, with corresponding death-rates of 56·5, 66·0, and 51·7 per cent. In 1,219 cases collected by Lane (Cooper's "*Surgical Dictionary*"), the mortality was 46·4. Amputations for disease may thus be set down—153, 59, 583; and of these there died 22·9, 38·9, and 21·9 per cent. respectively, Erichsen's numbers being 27·4, and Lane's (from 1,439 cases) 26·12 per cent.

Referring to the observation of Simpson and others that the risk in an hospital increases with its age, Dr. Thomas observes that the present Surgical Hospital was opened for the reception of patients on the 21st May, 1861. The first 3 cases of amputation died of pyæmia. In 182 primary amputations in the old wards, from 1st January, 1849, to 21st May, 1861, there was a mortality of 32·4 per cent.; while in the new, from 21st May, 1861, to 31st December, 1873, there were 404 primary amputations, with a death-rate of 38·3 per cent. Secondary amputations showed in favour of the new hospital by 42 as compared with 60 per cent.

As to the causes of death, 42 out of 240 were due to shock; while 54 out of 240 were caused by pyæmia, giving a total mortality of 22·5 per cent. of the deaths, and 8·2 of the total primary amputations. Of the 123 deaths after amputation for disease, 26 were pyæmic, or 21 per cent., or 4·4 per cent. of the

total 583 amputations for disease. "Of the total 451 deaths occurring out of 1,412 amputations 107 died from pyæmia, or 7·5 per cent. of the total amputations, and 23 per cent of the total deaths; or, to put it more strongly, 1 out of every 4 who died might have survived but for this pest; and instead of having a mortality of 32 per cent., but for this cause the total mortality would only have been 24 per cent.—that is, 8 persons out of every 100 operated on would have been saved." To diminish mortality from this cause Dr. Thoinas urges the strict observance of cleanliness and ventilation, and suggests that in every hospital there should be large rooms for operation cases—these apartments to be thoroughly cleansed after the discharge of each case.

THE CORPUS MORGAGNI WITH REFERENCE TO DISEASES OF THE TESTICLE.

Mr. S. Osborn, in a paper upon this subject,* desires to show that in addition to those diseases, such as congenital hydroceles and hydroceles of the cord, usually ascribed to imperfections of development, the corpus Morgagni besides being the common cause of encysted hydrocele of the testis, may be the seat of solid tumours. The "hydatid" described by Morgagni is now known to be the upper portion of the canal described by Müller, and known as the Müllerian duct. As the Wolffian body is the excretory channel for the primitive kidney, so may the Müllerian duct be the excretory channel for the ovary or testis. The solid tumours which are found in the corpus Morgagni are the result of irritation. The body by the continuous addition of new material in concentric layers assumes a pyriform shape of cartilaginous or fibrous consistence, and ends by forming a tumour, which is attached to the cleft between the body of the testicle and epididymis, either with or without a pedicle more or less slender. Should this pedicle become ruptured or otherwise disconnected from the testicle, it will account for the presence of those cartilaginous bodies which are occasionally found loose in the cavity of the tunica vaginalis, varying in size from a pin's head to that of a Barcelona nut.

Some cases are on record in which foetal remains were detected in cysts of the testicle. Andre^b reports a case in which an abscess having formed in the testicle of a child, a small puncture was made. A month afterwards a tubercle the size of a cherry protruded,

* St. Thomas's Hospital Reports. Vol. V. 1874.

^b Memoires de l'Académie Royale de Médecine. Vol. III., p. 480. 1833.

in the centre of which three ossific spots were observed having the polish and whiteness of teeth. Subsequently there was a larger mass. The tumour was removed, and was found to contain a large molar, destitute of enamel, and irregular in configuration. There were three other teeth, one of them having the characters of a canine.

Velpéau* relates a case in which he removed a tumour of the testicle from a young man aged twenty-seven. In its interior were two small cysts filled with a material analogous to albumen or vitreous humour; another contained a material like meconium; and in a fourth a gummy mass hardened and surrounded by hairs. In addition there were numerous portions of a perfectly organised skeleton.

The great similarity of these growths to the dermoid cysts of the uterine appendages will be at once seen. Like them, they are similar in their mode of formation from cysts, and also in their mode of termination by setting up inflammation and suppurative action.

THE TREATMENT OF ANEURISM.

A few cases of aneurism,^b recently reported, offer interesting examples of the results of some of the many modes of treatment which have been advocated in this disease. Dr. McCall Anderson, of Glasgow, gives the notes of two cases of aneurism of the arch of the aorta in which he employed galvano-puncture. In the first the patient was a man aged thirty-six, who had lived a very irregular life, and in whom the signs and symptoms of the affection were well marked. There was fulness in the second left intercostal space and dulness, measuring three inches from above downwards, and extending from an inch to the right to one inch and a half to the left of the sternum. There was dysphagia. After some time the fulness became a tumour projecting three-quarters of an inch. On the 12th January, 1874, galvano-puncture was performed. The skin was frozen with ether, and an insulated needle connected with the positive pole of the battery was introduced. A zinc plate connected with the negative pole was applied to the chest wall in the vicinity of the tumour, a large piece of sponge moistened with salt water being placed between the plate and the skin. The operation lasted one hour,

* *Gazette Médicale de Paris*. 1840. Page 97.

^b *Brit. Med. Journal*. Oct. 23 and 30, 1875.

our cells being used during the first half and six during the second. There was no pain during the operation, although there was subsequently. The dysphagia was less marked on the 20th. On the 23rd of January and the 8th February the operation was repeated, on the last date with six and eight cells. There was a considerable jet of blood on the last date. The galvano-puncture was repeated on the 16th April, but the patient then insisted upon leaving. The condition then was—the tumour was firm and hard, and had fallen almost to the level of the surrounding surface. It pulsated, but had no murmur. The dysphagia was variable.

In the other case the tumour was at the lower and inner part of the left infra-clavicular space. It was three inches and a half in diameter and an inch and a half above the surface. The operation was done four times—on the 4th, 9th, and 28th April, and on the 27th August, 1872. On the 26th October the tumour had reduced to a quarter its size, was very solid, and without a trace of passing tremor. There was much diminished pulsation. She left hospital and resumed hard work in spite of the advice given. On the 7th January, 1874, she died, 498 days after operation. The aneurism was found to implicate the whole of the transverse and descending parts of the arch, and was completely filled with firm pale fibrinous clots, but at the lower part of the tumour the blood had forced its way between the stratified clots and the walls, and penetrated the left pleural cavity.

As to the rules which Dr. Anderson's experience sanction, they may thus be given:—

1. It is safer to attempt a cure by means of chemical than by means of inflammatory action, and therefore in every case the continuous current battery should be employed.

2. He always employs one of Stöhrer's large-celled batteries, but the kind of instrument is not of great consequence, provided the cells are large.

3. The needles should not be very thick, and should be insulated to within half an inch of the point, for we must aim at acting upon the blood in the aneurism only.

4. Should the needles be connected with the positive or negative or both poles? The balance of opinion seems to be in favour of connecting them with both, although Anderson prefers connecting the needles with the positive pole only.

5. He uses a weak current, as it gives little or no pain, and does not excite serious inflammation.

Anderson considers the operation comparatively safe, but thinks there is a question whether the consolidation of the portion of the tumour which approaches the surface may not in some cases favour the extension of the disease in other directions.

Mr Thomas Annandale, of Edinburgh, reports a case of aortic aneurism treated by the method of distal ligature. The disease had been observed six months previously, and on the admission of the patient to hospital a pulsating tumour was found passing from behind the clavicle and the sterno-clavicular articulation into the neck as far as the cricoid. There was well-marked bruit and dulness on percussion, and, in addition, the patient suffered from irritating cough and pains shooting up into the head. On the 8th of February, 1875, the tumour had increased considerably, the patient having meanwhile left hospital. It was now higher in the neck, and had spread laterally so as to overlap the site of the subclavian artery. Pressure on the right carotid diminished the pulsation considerably, and it was therefore deemed a fair case for the distal ligature. The position of the tumour did not permit the subclavian artery to be ligatured, but there was just sufficient room to secure the common carotid. Accordingly, the operation was performed, a catgut ligature and the carbolic spray being employed. The immediate effect was to almost stop the pulsation and to convert it into a kind of quivering motion. In a week the patient was out of bed, the pulsation having become very feeble. In September last the patient presented himself for examination. The tumour had become flatter and firmer, and was fully half an inch lower than before the operation. A slight bruit could still be heard, but the pulsation was very weak. Mr. Annandale speaks favourably of the effect of iodide of potassium in relieving symptoms, an experience which the reporter is able to verify. In cases where operative interference is determined upon, he thinks with Holmes that the carotid should first be tied, ligature of the subclavian being reserved for a future time.

At the meeting of the Medical Association in Edinburgh, Mr. J. Dix, of Hull, read the notes of two cases of aneurism which he had treated with the wire compress—a method also advocated by Langenbeck, Neudörfer, Hilliard, and Porter. The steps of the proceeding are best given in his own words:—

“The artery, which was very large, was exposed below the omo-hyoid, and an aneurism-needle passed under it in the usual way. A piece of

surgical iron wire was threaded through the eye of the aneurism-needle and conveyed beneath the artery by the withdrawal of the needle, which was then detached from the wire. To each end of the wire a straight needle was next attached, and the two needles were passed through the tissues, on the outer side of the incision, being about half an inch apart at the surface of the skin, and the same distance from the edge of the wound ; the wire being drawn through and thus looped over the artery, the needles were detached. The half of a vial-cork was placed, the flat side downwards, between the ends of the wire, and firmly pressed down along the course of the artery ; the wire was tightly twisted over the cork, stopping at once the current through the artery and the pulsation of the aneurism. The superfluous ends of the wire were cut off, and the wound was united by wire sutures. The man was then in a state of extreme collapse from chloroform ; in fact, he was to all appearance dead, and was only resuscitated by the strenuous and persevering exertions of my assisting friends. With the recovery of the circulation, there was also a recurrence of feeble pulsation in the tumour. This was allowed to go on till the third day, when the compress was thus tightened :—The cork being firmly pressed down upon the artery, and the wire drawn outwards by gentle traction on the twisted end, two small wooden wedges—portions of lucifer matches in fact they were—were pushed in between the cork and the wire ; and now, for the first time, the circulation was entirely arrested, and all pulsation and bruit ceased. Two hours afterwards, there was again a feeble thrill ; so next day, the fourth after the operation, another little wedge was inserted. After that, there was no more pulsation. Fifth day.—No pulsation ; the tumour was evidently consolidating, and perceptibly diminished in size. One wedge was removed to lessen the tension. Sixth day.—The other two wedges were withdrawn in the morning, and, in the afternoon, the cork was also removed. The tumour was considerably smaller, and, on the seventh day, the wire was withdrawn without difficulty and without blood. Some pus exuded from the track of the wire, and there was moderate suppuration in the wound. Tenth day.—It is noted that “the tumour is nearly gone.” There was pulsation in the artery up to the aneurism beyond the site of the application of the wire, showing that no damage was done to the coats of the vessels. This only continued for a few days, for, as it led to nowhere, the artery was soon obliterated, and, when the man died seven years afterwards, a fibrous cord was all that remained either of the artery or of the disease. In a fortnight the wound had healed, and the patient was cured.”

The second was a case of femoral aneurism which resisted treatment by pressure. The same method was adopted, the wound being healed in nine days without suppuration, the tumour

gradually disappearing. He thus details the advantages of the method as compared with that of using the ligature:—

“The wire compress does not damage the coats of the artery as the ligature does.

“It is not a foreign body in the wound, as the ligature is.

“Therefore it does not excite suppuration and impede healing, as the ligature does.

“It is not a fixture upon the artery, as the ligature is; but it can be removed, or relaxed at any time, which the ligature cannot.

“It does not ulcerate through the artery, and open the blood channel, as the ligature does; therefore, bleeding is impossible. With the ligature there is always the risk, and not seldom the occurrence, of bleeding.

“It causes a retarded circulation and gradual occlusion of the artery, so diminishing the risk of gangrene; the ligature causes sudden obstruction, hence gangrene often follows.

“Ultimately, or even at once, if desired, it entirely obstructs the current of blood, so curing the aneurism, as effectually and as completely as the ligature does.

“It affords a wider choice of locality for operation than the ligature does, and is applicable to all arteries alike, which the ligature is not.

“As compared with the catgut:

“It is not liable to become relaxed or detached too soon, as the catgut is; it does not cut the coats of the artery as the catgut does.

“Thus it confers absolute immunity from hæmorrhage, which the catgut does not; it causes gradual occlusion, which the catgut cannot do.”

In the last volume of the Transactions of the Medico-Chirurgical Society,^a Mr. M'Gill, of Leeds, reports a case in which he applied temporary compression to the first stage of the left subclavian artery for an aneurism of that vessel. The patient was a woman aged thirty-five, and first came under observation at Christmas, 1871. Digital compression was then applied to the artery in its third stage for twenty-four hours consecutively without improvement. In 1873 she again came under treatment. The method of galvano-puncture was adopted, both negative and positive needles being introduced into the sac. The operation was repeated five times with temporary relief, and in February, 1874, manipulation was tried unsuccessfully. In November of the same year the tumour had increased considerably, extending inwards under the outer part of the sternomastoid, and externally towards the axilla. It was then resolved to try temporary compression in the first stage. After a good deal of

^a Vol. LVIII., page 338.

trouble in finding the vessel, which had become displaced, an aneurism-needle was passed round it, but in so doing a small wound was made in the pleura. A pair of torsion forceps were then applied, and the wound closed. At half-past twelve at night the forceps were removed so as to close the wound perfectly, and prevent the ingress of air into the pleura. The aneurism felt quite hard and contracted, and no pulsation could be felt in it or in the radial artery. The patient, however, sank and died in five days and a half, and at a *post mortem* examination the sac was found to be filled with a firm hard clot and was in fact cured.

In discussing the results of previous operations upon the first stage, Mr. M'Gill observes that the result of the ligature precluded its use in this case. In ten out of eleven cases reported death was caused by secondary hæmorrhage, and it was not unreasonable to conclude that if this could be avoided the operation would present a fair proportion of favourable results. In the present case he ascribes death simply to the wound in the pleura, and he believes that if this unfortunate accident had not occurred the patient would have recovered.

ON EXTIRPATION OF THE LARYNX.

This operation has been performed in Germany by Billroth, Heine of Prague, Schmidt of Frankfort, and very recently by Langenbeck. It has not yet become fashionable in these countries, but as it is possible, and as patients have recovered from the terrible mutilation, it is not likely to remain unattempted elsewhere. In the case here referred to, the patient was aged fifty-seven, and had had tracheotomy performed in November, 1874, for threatened suffocation due to destructive ulceration in the larynx. A month afterwards symptoms of cancerous disease were very marked, but the patient declined to have his larynx extirpated, and left hospital. He returned in July of the present year much worse, and gave his consent to the operation. The first step was to enlarge the opening in the trachea, and to introduce Trendelenburg's tampon-canula. The blood was prevented from passing down the trachea. The patient having been chloroformed, Langenbeck made a transverse incision through the skin 8 inch above the hyoid bone, and from the centre of this another was carried downwards towards the tracheal fistula. The flaps were dissected

* Berliner Klinische Wochenschrift, Aug. 26; and London Med. Record, Sept. 15, 1875.

back, the infiltrated lymphatic glands and the right submaxillary gland were removed, and the lingual artery was tied. The same was repeated on the left side. The disease was found to have infiltrated the pharynx, which could not be dissected from the larynx. Under these circumstances the larynx was drawn forwards, the point of the tongue was pulled out of the mouth, and the root of the organ cut through four-fifths of an inch above the hyoid bone. The superior thyroid arteries were tied. The lateral wall of the pharynx was cut through, and the external carotid having had two ligatures applied, was severed between them. At this stage the larynx was only connected with the trachea, and this was divided just below the cricoid cartilage. The spinal column, only covered by the posterior wall of the pharynx and œsophagus, was then exposed. No less than forty-one ligatures were applied, the vessels secured including the lingual, superior thyroid, and external carotid arteries. The patient was not much exhausted after the operation, and in seven days he was free from any fever.

Billroth and Schmidt adopt a longitudinal incision, and remove the larynx by cutting through the trachea from below. Langenbeck recommends the T-incision as being more convenient. He also observes that by commencing the operation from above it is possible to expose and tie the principal arteries before dividing them. He attaches the greatest importance to the plugging of the trachea, and says it is advisable to have various sizes of Trendelenburg's tampon-canulæ at hand. Tracheotomy is an essential preliminary step, and may in most cases be done some time before the more serious operation so as to permit the healing of the fistula.

SYPHILITIC BUBO.

The methods which have been suggested for the treatment of bubo, in order to bring about resolution, are numerous and not satisfactory. The list has received another addition at the hands of Dr. Franz Jakubowits,* who has for some time been using injections of iodide of potassium in the various forms of non-syphilitic glandular enlargements. He has lately extended their use, and although he has not operated in many cases his results he claims to be most encouraging and satisfactory. In the first case the patient was unable to give up his occupation. A bubo the size of a goose's egg and very painful, formed in the left groin. There was a good deal of inflammation but no fluctuation could be detected. The

* Wiener Med. Presse. Nos. 3 & 4, 1875.

treatment by injection was determined upon in the hope of bringing about resolution. Fifteen grains of iodide of potassium, and five drops of the tincture of iodine were dissolved in an ounce of water. An ordinary subcutaneous-injection syringe was filled, and the needle was pushed obliquely into an enlarged gland. When a fourth of the contents had been passed in, the needle was introduced in another direction, and so on until the syringe was emptied. Some pus was found on the needle. In the evening, after a day's walking, the tumour was harder, and less painful. The operation was repeated next day, and two more injections were given at intervals of two days. The tumour had entirely disappeared in about a fortnight. In a subsequent case the results were also satisfactory, but further observation is necessary.

PULSATING TUMOUR OF THE LEFT ORBIT.

In a voluminous paper,* in which he deals very minutely with this subject, Mr. Walter Rivington gives the details of a case which he had treated successfully. The patient was a young man, aged twenty-four, a plate-layer, who had been struck on the right side of the head by the step of a passing engine. He received a fracture of the skull, there being a depression of the parietal bone for three inches towards the frontal bone. There was great swelling of the right eye, with subconjunctival effusion on both sides. On the 17th July, 1873, nine days after the accident, there were ptosis and paralysis of the internal, superior, and inferior recti on the left side, and it was noticed that that eye was more prominent than the other. Things remained almost unchanged until the 23rd August, when distinct pulsation was observed, and a bruit could be heard over the temporal fossa. The patient said he heard a noise in his head like the wind blowing. Vision was impaired. Pressure on the carotid lessened the bruit and noise, and on the 3rd August digital compression was kept up for several hours. On the 15th September both carotids were compressed for two hours, and then the left for seven, but without result. In November digital compression was again tried, and the patient was sent to a convalescent home. On his return the exophthalmos was more marked. The space between the globe of the eye and the orbital arch was filled on the inner side with a pulsating, soft, compressible, and thrilling tumour. Mingled with the bruit, which retained its former character of continuity, with reinforcements during the arterial

* *Medico-Chirurgical Transactions.* Vol. LVIII., page 183.

pulse, a high plaintive whistling note could be heard at intervals—the sound described by French writers as *bruit de pialement* or *bruit de miaulement*, from its likeness to the mewing of a cat. Mr. Holmes expressed his belief, in which Mr. Rivington concurred, that the nature of the aneurism was arterio-venous, a communication existing between the carotid and the cavernous sinus. Pressure was again tried at various periods unsuccessfully. Operative treatment became necessary, but the effect of compression did not hold out any hope from ligature of the vessel. The great desideratum appeared to be the obliteration of the dilated ophthalmic vein, and it was determined to try the injection of iron. On July 11th, 1874, more than a year after the original accident, five minims of a neutral watery solution of the perchloride of iron, 28 per cent., were injected into the pulsating tumour below the orbit. Some arterial blood escaped. Three or four minutes later the upper eyelid began to swell, and soon became very tense. The conjunctiva round the cornea was raised by clear transparent serum which afterwards became turbid. Locally the effect of the injection was to produce a small coagulum in the ophthalmic vein at its anterior part, and to alter the character of the pulsation and bruit. The pulsation became of a steady, heaving character, and the bruit ceased over the upper eyelid. The swelling increased, and, the pulsation continuing, the common carotid was tied on the 18th July. The pulsation ceased in the upper eyelid, and the bruit, after a minute's cessation, returned, but was less loud. The ligature separated on the 5th August, three weeks afterwards, and the arrest of pulsation was then found to be complete. The swellings disappeared gradually, the eye regaining its position in the orbit. A modified bruit was still heard when the patient was seen in the following October. Mr. Rivington attributes the failure of the injection to the small quantity of the solution employed. Ten or fifteen drops would probably have effected coagulation.

Regarding the differential diagnosis of the various conditions of the vessels behind the orbit, so far as our information extends, it would appear that the distinctive signs of arterio-venous communication in the cavernous sinus are a bruit, which is continuous with reinforcements during the arterial pulse, and the *bruit de pialement*. Vibratory thrill is not reliable. An enlarged ophthalmic vein is revealed by its peculiar softness and compressibility, as well as by its position at the inner angle of the orbit.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SAMUEL GORDON, M.B., President.

GEORGE F. DUFFEY, M.D., Honorary Secretary.

Wednesday, November 10, 1875.

The PRESIDENT in the Chair.

The CHAIRMAN delivered the following Inaugural Address:—

SINCE we last met in this Hall there has been made, as you will have observed, a large and substantial addition to this building. These additions have been made by the College, to be subservient to all uses which shall advance the interests of the Medico-Chirurgical School of Dublin. For their erection and for their completion in the perfect and entire manner in which it is proposed to arrange them, we owe much to the untiring exertions of Sir Dominic Corrigan, and if, as the tablet beneath his portrait informs you, it was by his exertions mainly that the original building was founded, so we owe it to his continued energy and self-sacrificing exertions that we are now in a position to accommodate any society which will have for its aim the advancement of medical science and the welfare of mankind.

The Report of the Council, which was read to you on the last night of meeting, enters so fully into the proceedings of the Society, that I shall not take up your time in attempting any analysis of them, as I should otherwise have felt bound to do. I shall only observe that those gentlemen who have made communications deserve the thanks of the Society for the truly practical nature of the subjects which they have brought before us.

For several successive sessions the nature, progress, and treatment of the prevailing epidemic has been in some form brought under the notice of the Society. During the past session the subject of scarlatina was very fully discussed. Perhaps no more useful subject could be brought before any epidemiological society. Where the mortality

of any disease varies, as it does in scarlatina, in different places and at different times, there must be at work various causes, the discovery and elucidation of which are matters which must prove of paramount interest to all physicians and supporters of State Medicine. Next to diarrhoea, scarlatina was by far the most fatal epidemic disease during the last summer, and, as usual, the mortality varied immensely in different districts. Thus the Registrar-General, in his last quarterly return, states:—"Scarlet fever was undoubtedly epidemic in London last quarter, but if this epidemic had been as fatal in the metropolis as it was in one particular town, the result in deaths during the three months would have been more than 24,000, instead of the 1,076 that actually occurred." I would, therefore, strongly recommend to the Society the continuance of this plan of, as it were, converting themselves for a time into an epidemiological society.

The Report of your Council has wisely dwelt upon the great value of submitting to the inspection of members recent pathological specimens, particularly at a time when the Pathological Society may not be holding its meetings, or as occurred in the last session, when they added so much to the elucidation of the cases recorded.

Your Council have also referred to the losses your Society have sustained by death during the past session. They have fortunately been few, but they have not been unimportant. Mr. L'Estrange was best known in the surgical world, which, outside of his own immediate department in which he so much excelled, he had enriched largely by the invention and improvement of various surgical instruments—*e.g.*, his instrument for fractures of the lower jaw, his improvements on the dislocation pulleys, on the lithotrite, and on trusses. Professor Law was well known as a constant attendant at the meetings of this Society; indeed, he may truly be said to have begun and to have ended his medical career in the Medical Society of the College of Physicians. Dr. Law's first communication was made nearly fifty years ago to our parent Society, the Medical Association of the Fellows and Licentiates of the College of Physicians. These communications were of the most valuable kind—careful records of facts, cases studied in the wards of the hospital, and followed to the *post mortem* room; and though their value, or significance, was not recognised at the time, yet, as Carlyle says, "all true work of a man—hang the author of it on what gibbet you like—must and will accomplish itself," and these carefully recorded cases of Dr. Law were the commencement of the discovery of the true pathology of cirrhosis of the liver and of gangrene of the lung; and having thus begun his medical career, his last appearance in public was to preside at a meeting of this Society. Your Council have dwelt upon his many social virtues and high professional attainments, and I will not weaken what they have said by further praise.

These, I am thankful to state, are all the losses from our ranks which we have suffered by death within the last year. It sometimes happens, however, that an army has to deplore the loss of an ally dearer to them than many of their own immediate comrades, and from whom they have often received more valuable assistance; and, therefore, I am emboldened to detain you while, at the request of many of his nearest friends and relatives, I endeavour briefly to lay before you the medical history of the late Mr. Hamilton's fatal illness. Although not a member of this Society, there was no society for the advancement of medical and surgical knowledge in the progress of which he was not warmly interested.

About five years ago Mr. Hamilton was the subject of a very severe and protracted attack of dysentery. This occurred in the spring of the year, and in the summer—not having made a perfect recovery—he thought that in some of the German watering places he might find some perfect rest and complete cure. The heat of Paris that year, however, was unusually great, and brought on a relapse of the dysentery, from which he continued to suffer until at Homburg he again recovered his usual strength, and apparently his usual good health. From this time, however, he was subject to very great irregularity of action of the bowels, and this he unfortunately assisted by great want of prudence as to his times of eating and of soliciting alvine discharges. He considered himself, however, in perfect health, and the two following years was able to take long walks day after day on the Swiss mountains, and returned home with renewed health and vigour. In May, 1874, he became uneasy about his health—he lost his usual good appetite, became very flatulent, had a return of dysenteric stools, and was conscious of a large tumour towards the left side of the abdomen. At this time I saw him, and after careful examinations, was satisfied that this tumour was a collection of retained hardened fæces, and that this retention was the cause of his symptoms. Under treatment founded on this idea the tumour totally disappeared. The alvine discharges usual in such cases showed that a large accumulation existed, and that there was no mechanical obstruction to its passing away. In the following month he went as usual to London, and in the summer went to Baden, and returned, considering himself equal to any amount of professional work and exercise.

During last winter he made no complaint; he seemed to progress satisfactorily, but there was still unsatisfactory intestinal action—sometimes diarrhœa, sometimes constipation, and variable appetite—until, in the following spring, on the 11th May, 1875, he was prostrated by an attack of severe choleraic diarrhœa; this reduced him greatly, and as he slowly recovered from it he was attacked by severe pain in the rectum at and after each motion, and great tenesmus. On examination a deep fissure was found, and the complete division of this was followed by the most perfect relief. The wound healed up rapidly, and he again seemed

to be recovering; this, however, was not to be—returns of diarrhoea, with occasional mucoid dysenteric stools, disturbed his night's rest, impaired his appetite, and slowly but steadily interfered with nutrition. He gradually wasted, became daily less equal to his usual exercise, and it became a question whether he was not the subject of malignant disease. Most careful examination could discover only one sign to countenance this notion—namely, the existence of an elongated thickening, which was tender, and which rolled under the finger towards the left iliac fossa. There was no glandular enlargement anywhere. It was possible that this might be a cancerous tumour involving the colon, but it was also possible that it was a thickened intestine, the thickening having been caused, not by any cancerous or tuberculous action, but by repeated attacks of inflammation. The diarrhoea having been much subdued, and his strength partially restored, Mr. Hamilton went to the neighbourhood of London for some weeks, and took the opportunity of consulting his old friends, Mr. Pollock and Mr. Curling. Mr. Fayrer also saw him, and all agreed, after most careful examinations, that they could not discover any sign of malignant disease. I happened to be in London about the same time, and had it from Mr. Pollock that such was their diagnosis.

Early in September Mr. Hamilton returned to Dublin, and on the 14th of September Mr. Thomson opened a small superficial abscess near the anus, from which escaped about two drachms of healthy pus. After this, for the first time, Mr. Hamilton began to complain of any urinary distress. Twenty-four hours after the abscess was opened he passed air per urethram. The urine was examined on the 14th, and it contained a very small quantity of muco-purulent matter, and a large quantity of lithic acid. On the 18th Mr. Hamilton found the urine very turbid, it pained him to pass it, and he was beginning to suffer from repeated calls to urinate.

On the 20th I saw him pass urine containing a large amount of broken down feculent matter and a considerable quantity of air. At this time the bowels were moved about four times in the twenty-four hours, the motions being sometimes fluid, sometimes semi-solid. On the 26th another very small superficial abscess was opened close to the anus, which rapidly healed; that opened by Mr. Thomson on the 14th had long since closed up.

Dysuria now set in in a most aggravated form; he seldom passed half an hour, day or night, without passing water in extreme agony; it was always more or less purulent, mixed, more or less, with feculent matter, and always with air. Of course he emaciated further, and his appetite, lately so much diminished, lessened still more. He drove into town from Stillorgan one day on urgent business, and drove back, and this, if possible, aggravated the urinary symptoms still more.

It now became a matter of urgent necessity to devise, if possible, some means for lessening these sufferings. I had known of the existence of such cases in some of our hospitals, and I had read of some such. The volumes of the Medico-Chirurgical Transactions contain a few such cases admirably detailed; but I had myself witnessed only one such, and the recollection of it did not add any pleasing prospect as to the probable result of Mr. Hamilton's case—the case I allude to is published in the Transactions of the Pathological Society.* It occurred in the Whitworth Hospital under the care of my colleague, Dr. Banks. The history of the case during life is very complete, and the *post mortem* examination made by Dr. M'Donnell is most instructive as to the progress of such cases if left unassisted. This case was also peculiarly interesting at the time, because I believed that the two cases were exactly similar in their origin—both commencing with dysentery and both unaffected by malignant disease. Well, the *post mortem* examination showed that what we were to expect was:—

“The bladder was found so much contracted that when inflated to the utmost with air, it did not rise above the symphysis of the pubes. The rectum, similarly inflated, was very capacious at its superior and inferior part; the middle portion of the rectum was, however, for some inches very tortuous, closely bound by old adhesions to the bladder, and contracted to so small a size that a catheter could not be passed through the gut. On cutting open the bladder, its mucous coat was found to be much thickened, deeply ulcerated; and in part coated with ash-coloured lymph. Immediately behind the trigone an opening existed between the bladder and rectum, through which a large-sized catheter could readily be passed; this opening was between, but posterior to, the mouths of the ureters. The inside of the bladder closely resembled a piece of ulcerated intestine; the upper and lower portions of the rectum were also extensively ulcerated.”

Mr. Pollock was in Ireland, and saw Mr. Hamilton on the 19th and 30th of September. He still was of opinion that there was no evidence of malignant disease; but on the 30th he saw *fecal* matter in large quantity in the urine, and, a few days after this, the dysuria became so intense, it was proposed to him to consider the advisability of relieving the bladder symptoms by opening the intestine above the fistula. He discussed the matter with Mr. Curling, an old and attached friend of Mr. Hamilton, who wrote to him proposing the operation. Mr. Hamilton at once consented, and the operation was performed on Sunday, October 10, by Mr. Curling, assisted by Mr. Hamilton's colleagues, Mr. Thomson and Mr. Stoker. It took some time to bring the patient fully under the influence of ether, and then the operation was performed by the transverse incision, and in the situation originally marked out, I believe, by

* *Vide Trans. Pathological Society. Vol. III., p. 300.*

Mr. Hodgson, two fingers' breadth above the crest of the ilium, midway between the anterior and posterior superior spinous processes of the ilium—although the colon was not distended, but rather the contrary, no difficulty was experienced in finding it; it was drawn forward by strong forceps, divided, and the edge of the upper fragment attached to the integument by four points of suture; some feculent semi-solid matter escaped from the wound; there was scarcely an ounce of blood lost; no vessel required any ligature, and the operation did not last more than a quarter of an hour. There was not the least collapse, and one tea-spoonful of brandy was all the stimulant required for several hours. I shall not, of course, weary the Society with daily reports, but briefly mention the progress of the case from this time. Semi-solid fecal matter continued to come through the wound at intervals; a very small quantity came through the rectum once or twice in the twenty-four hours, but the relief to the urinary symptoms was almost immediate. Urine was passed at two, three, and on more than one occasion at four hours' interval; and on the second and third days after the operation it passed without any fecal matter, and with scarcely any pus. For a week after the operation there was a most decided improvement; the relief from the urinary distress gave him long intervals of sleep, and this, again, brought down his hitherto rapid pulse to be comparatively quiet. The hard thickened cord which existed in the left iliac fossa became much less tender, and if not smaller in size, certainly was not larger in any diameter than when first felt in June last.

On the ninth day after the operation, however, a great change took place. He complained of cold, for the first time had a slight shivering, and looked pallid and sunk. On examining for the cause a soft tumour was found in the right iliac fossa, very soft, could be easily emptied, and was evidently composed of air and fluid. It was considered to be an abscess connected with the recto-vesical ulceration, and it was decided to endeavour to bring it forward, and when opportunity offered to open it. This opportunity never offered; he daily became weaker; the wound took on an unhealthy action. He began to suffer from a low form of gastritis; complete loss of appetite; sour eructations; œsophageal dysphagia; aphthæ on a red-glazed tongue and mouth; and thus he gradually sunk—a model of faith and patience and resignation such as I have never before witnessed.

He died on the 2nd of November, the twenty-fourth day from the operation; and while we must most deeply regret that it failed to prolong his life, we must, I think, give credit to it for having procured for him immediate and permanent relief from the miserable sufferings which he was enduring, and which, however they might have increased, could not, in my opinion, have been otherwise mitigated.

SIR DOMINIC CORRIGAN read a paper, entitled, *Notes on Aix-les-Bains*. [It will be found at p. 485.]

DR. FOOT read a Paper, entitled, *Clinical Notes of a Remarkable Case of Obesity, treated with Liquor Potassæ and Extract of Fucus Vesiculosus*. [It will be found at p. 493.]

DR. HEAD inquired if there was any fat in the urine? He had recently seen a case of considerable obesity, in consultation with Dr. Adams, in which the urine was very fatty—in fact, quite chylous. The patient had been under treatment several years, and nothing appeared to give relief except very large doses of gallic acid. Under its use the fat disappeared entirely from the urine, and the patient also became less fat than previously. As there is a large quantity of tannin in the extract of seaweed, he thought it quite possible that, perhaps, part of the good effect of it in Dr. Foot's case might be due to the large doses of astringent substance it contained.

DR. FOOT said that there was no appearance of fat in the urine in his case. That point was particularly looked to.

DR. GRIMSHAW wished for information respecting the diet.

DR. HENRY KENNEDY thought that the treatment by liq. potassæ, which was used in this instance, might be brought to bear, as it had been by himself, on other cases with good effect—viz., in some cases of fatty disease of the heart. Sir B. Brodie gave it in beer; and he (Dr. Kennedy) believed the liquor potassæ could be borne better and longer when given in this way than in any other. Potash is a medicine that acts powerfully in all forms. But it acts differently on different individuals. Some bear it remarkably well, others very badly, even in half-drachm or scruple doses three times a day. On this account Dr. Kennedy has used the liquor kali in combination with medicines that would support the system at the same time. He had known it to be given in ℥ss. doses three times a day, and had repeatedly seen a considerable reduction in fat under its use, not in such remarkable cases as that which Dr. Foot had brought forward, but where it was an object to reduce the fat in order to make the individual more comfortable. The question of diet, though Dr. Foot had not entered into it particularly, was of the greatest consequence.

DR. AQUILLA SMITH remarked that cases of obesity had been divided into two classes—sthenic and asthenic; and from the general condition of Dr. Foot's patient, he should say that the boy was in an asthenic condition. The amount and kind of animal diet he got in hospital was

an important item in the successful result of the case. As to the fucus vesiculosus there had been very little evidence, so far as he was aware, of its specific effects. He was surprised to hear that iodism was produced in so short a time after the boy had commenced to take the remedy, as he believed there was but very little iodine in the fucus, its chief constituents being salts of lime and soda.

DR. FOOT, in reply, observed that those connected with Dublin hospitals know that they are not places where Banting's treatment can be carried out—viz., cold roast beef for breakfast and dinner, and meat of some kind for supper. His patient was put on the maximum of meat the hospital allows, and he had, besides stirabout, bread and the ordinary diet of the hospital. He may have had a little more meat than at home, but not at all the amount approaching that laid down by Banting. Dr. Foot did not attribute the result of the case at all to the amount of nitrogenous food the patient got. The mode of administration of liquor potassæ was decided by his own taste. Sir Benjamin Brodie gave it in beer simply to conceal the taste, and not, he thought, as a stimulant. Dr. Foot found that milk, from its mucilaginous character, hides the taste better than beer. Dr. Kennedy had made a slight confusion between physiological fat and pathological fat. He (Dr. Foot) could not conceive worse treatment than to give liquor potassæ in fatty degeneration of the heart. A totally opposite treatment was desirable, for where there was hypertrophy of fatty tissue it was well to get it oxidised and carried off, but to a heart which is rotting away from fatty degeneration it is not the treatment to be readily adopted. As to the fact of iodism being produced by the seaweed, it was well known that iodine is got from the *laminariæ* more than the *fuci*; but the extract Dr. Foot used was very strong, and on tasting or smelling it, one was immediately struck by the coarse taste of iodine and leather. There was undoubtedly a great deal of iodine, and it was, Dr. Foot thought, to the efficacy of the iodine that its properties are due. In the second edition of Duchenne's book, a number of cases of the efficacy of the fucus vesiculosus in obesity are given. It has been very much used in France by fashionable physicians, chiefly for giving ladies a better shape, but it has not been received by scientific practitioners as it might have been. It is one of those remedies that has had an ephemeral reputation, and has undeservedly fallen into disrepute. Dr. Foot said he preferred the Banting treatment, but that the expense might be an obstacle. He thought that a great point in this case was the condition of the testicles, and that the boy would be always liable to a recurrence of this fat.

The Society then adjourned.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

THIRTY-EIGHTH ANNUAL SESSION.

LOMBE ATTHILL, M.D., President.

J. RUTHERFORD KIRKPATRICK, M.B., Honorary Secretary.

Saturday, November 20, 1875.

THE PRESIDENT in the Chair.

The CHAIRMAN read the following Inaugural Address :—

GENTLEMEN,—The commencement of another session, the thirty-eighth of your Society, demands, in accordance with the usual custom, some observations from the outgoing President. First of all, I desire to thank you for the honour you have done me in placing me in this chair, an honour enhanced by the fact that it has been filled by men so distinguished as my immediate predecessors. Some of these eminent physicians are now present—of them it is unbecoming I should speak. Two others we have virtually lost since last we met—namely, Dr. Evory Kennedy and Dr. Churchill, who have withdrawn from practice, and ceased to attend our meetings. To them a few words of homage are, I think, justly due. The former, were it only on the grounds that he founded this Society, we should hold in grateful remembrance; but he has, besides, other and substantial claims on our regard. Placed forty-two years ago at the head of that great institution over which I have now the honour to preside, he speedily recognised the field which lay before him in the investigation of the then unknown affections of the uterus and its appendages; and if to us, who have profited by the labours and experience of Bennett, Simpson, Marion Sims, and a host of other writers and thinkers, Kennedy's observations, published more than thirty years ago, seem imperfect, let us remember that he was a pioneer, an original observer. I have no hesitation in expressing my opinion, that as he was the founder of this Society, so he was the first Irish practitioner who directed special attention to that important branch of our profession now embraced in the term *gynaecology*, and as such, we are deeply indebted to him.

Of Churchill I feel it difficult to speak, endeared as he is to us all—kind and frank by nature, rendered doubly so by that unostentatious, but fervent, piety which pervaded his every action. He was a kind and sincere friend, ever ready to impart to others that information which his great experience and untiring industry had enabled him to acquire. In his early career he had much to contend against, and when success had crowned his exertions, it seemed to be his greatest pleasure to encourage those who, weary with the struggle, were down-hearted and desponding.

I shall ever remember with gratitude the words of encouragement offered by him to myself in bygone years, when, weighed down by care and disappointment, I almost despaired of success. Dr. Churchill retires from among us with the sincere and deserved regret of all, and the equally well-deserved respect of, I believe, every member of this Society. It is superfluous here to say aught of him as a practitioner. Few, indeed, there are of us who have not from time to time availed themselves of his professional skill in trying and difficult cases, while his reputation as an author is, probably, greater than that of any other Irish practitioner. Though removed from amongst us, he is still of us. Long may he be spared to enjoy his well-earned retirement.

Turning from those who have ceased to take an active part in our proceedings, I must refer briefly to the work done in the past session, and I think, on careful investigation, it will be found to compare favourably with that effected by kindred societies. Bearing on the physiology of utero-gestation, as regards its departure from the normal process, we have had from Dr. M'Clintock an able and exhaustive paper "On Morbid Retention of the Dead Ovum," and a singularly interesting contribution from Dr. More Madden on "Monstrous Births and the Influence of Maternal Impressions on the Fœtus in Utero."

In midwifery, "The Clinical Report of the Rotunda Hospital for the Year 1874," so carefully and laboriously compiled by Dr. George Johnston, is deserving of special attention; while Dr. Denham detailed an interesting and instructive "Case of Extra-Uterine Gestation," and Dr. Roe one of "Retained Placenta." Dr. Byrne contributed an essay on "Combined External and Internal Version," and Dr. More Madden another "On the Use of the Short Forceps as a Tractor, and on the Long Double Forceps as a Compressor and Tractor." Dr. Nichols related his experience in cases of "Protracted Labour and Hour-glass Contraction," and Dr. MacSwiney the particulars of a case in which true epileptic convulsions occurred during labour, rendering delivery necessary under circumstances of great difficulty.

In the subjects embraced under the head of Gynæcology and Uterine Surgery we have had from Dr. Kidd a most important communication, embracing the details of several cases in which *uterine tumours* were removed successfully by means of an operation which, in its leading features, is essentially his own—an operation adopted now by gynæcologists, not alone in this country, but also abroad, and which is, perhaps, the greatest improvement made of recent years in uterine surgery. I allude to the dilatation of the uterus by the introduction, at one time, of numerous pieces of sea-tangle, and the subsequent removal of intra-uterine polypi by means of the *écraseur*. Dr. Croly brought under the notice of the Society "A Case of Ovariectomy," and Dr. More Madden one of "Metro-peritonitis following Vaginal Injections."

Such have been our contributions to the literature of obstetrics and gynaecology. Several of these are of great value, and calculated to advance our knowledge of the subjects of which they treat.

In other societies, also, contributions of great value have also been made, likely to influence in a marked manner the future treatment of uterine disease. Of these none, in my opinion, are of greater importance than those of Dr. John Williams, of London, "On the Structure of the Mucous Membrane of the Uterus, and its Periodic Changes."

Let me for a moment recall to your minds what until recently has been the amount of our knowledge respecting the menstrual function. Dr. Carpenter, in his "Principles of Physiology," published in 1842, says:—"The catamenial discharge appears normally to consist of blood deprived of its fibrine, the fluid being composed of serum, in which the red corpuscles are suspended. . . . Much discussion has taken place respecting the causes and purposes of the menstrual flow, but no satisfactory conclusion has been attained."

This confession of inability to explain a function of such importance has been reiterated since then by most of the systematic writers on physiology, and is still commonly repeated in our schools. But of late numerous observations have been made with great care, by Dr. Arthur Farre and others, on the structure of the lining membrane of the uterus and the changes it undergoes, the result of which may be briefly summed up by saying that each menstrual period consists mainly in the disintegration, or, as some will have it, the "desquamation" of the lining membrane of the uterus, which process is accompanied by the exudation of a greater or less quantity of blood. The menstrual discharge, then, does not, as was formerly believed, "consist of blood deprived of its fibrine," but of disintegrated epithelium, mixed with blood in very variable proportions. But if this view is true, as I believe it to be, the menstrual flow becomes merely the termination of a process, slowly and gradually completed, and not a special function *per se*, for if the lining membrane of the uterus be disintegrated and cast off at each menstrual period, it must be as frequently reproduced. The catamenial flow, therefore, must be to the intra-menstrual period what the lochia are to pregnancy—a discharge mainly composed of effete materials. To treat aright disorders of menstruation, then, it follows that we must rather consider the condition of the uterus during the intra-menstrual period than during the time occupied by the flow, which is but the termination of a prolonged process—namely, the gradual development of a lining membrane—a process to which Dr. Aveling has applied the expressive name of "NIDATION," and which is defined by him to consist in the periodic development of a membrane lining the interior of the body of the uterus, "which fits it for the reception of the ovum," while to the period occupied by the disintegration of this membrane,

commonly called the "Catamenial," or "Menstrual Period," he applies the term "DENIDATION."

On the present occasion it is not my intention to discuss at any length the physiology of menstruation, a function still but imperfectly understood. To those who desire to become acquainted with the exact state of our knowledge on this subject I commend the perusal of the articles published by Dr. John Williams, of London, in the second volume of *The Obstetrical Journal*, and which I have already referred to. I desire merely to point out the bearing which, in my opinion, our recently-acquired knowledge of the changes which the uterus periodically undergoes has on the treatment of uterine disease, but to do so it is necessary to summarise the results which the researches of Dr. Williams and other observers go to establish.

As may be inferred from the quotations I have already made, Dr. Williams holds that there is no such thing as "a period of uterine rest," what we usually term "the menstrual period" being but the termination of a period of extreme uterine activity, during which the uterus is being fitted to receive the impregnated ovum. In fact, he considers the time occupied by the catamenial flow, so far from being a period of unusual excitement and activity, to be probably the very reverse.

During the continuance of the menstrual flow the mucous lining of the uterus rapidly undergoes fatty degeneration and disintegration, and at its termination the inner surface of the uterine wall is found to be bare, the muscular fibre cells being exposed; this condition, however, soon ceases to exist. Within three days of the cessation of the flow the muscular fibres are covered by a thin layer of superficial tissue, which rapidly becomes developed, and soon presents the appearance of a thick, soft, mucous membrane, which in its turn undergoes fatty degeneration and disintegration, unless impregnation taking place, a further series of changes occur, to which it is foreign to the scope of my present purpose to refer.

The views I have thus briefly summarised open up numerous questions of interest. Prominent among these is one, hinted at rather than expressed by Dr. Williams—namely, Is the uterus a muscle, properly so called, at all? But, leaving the discussion of this and other purely physiological questions to those who are more capable of deciding them, I will ask you to consider the practical inferences to be deduced from the facts recorded by Dr. Williams.

Till within a comparatively recent period no attempt was made to cure patients suffering from uterine disease, except by constitutional treatment and by the application of such agents as the solution of nitrate of silver to the vagina and vaginal surface of the cervix uteri. Now, however, it is almost unanimously admitted by those who have paid careful attention to "those diseases which are peculiar to women,"

that in the great majority of such cases it is not the vagina, which is the seat of disease, nor yet the cervix uteri, but the body of the uterus, and of the intra-uterine surface specially. Speaking of cases of uterine disease met with in my own private practice, and of which I have the notes, I find that the body of the uterus was implicated in not less than 70 per cent., excluding all those in which tumours of any kind existed.

This being so, it becomes necessary in such cases to direct our treatment to the body of the uterus, and frequently to make applications of various kinds to the interior of the organ. The success of this kind of treatment, when judiciously carried out, has been very great, but I believe it will be still greater as our knowledge of the function of menstruation increases, understanding that term in its most extended sense as implying both "Denidation" and "Nidation."

I think I can without difficulty show that the knowledge attained by the recent investigations which I have alluded to already throws light on the treatment of certain forms of uterine disease. Every member of this Society is aware that strong caustics, such as chromic acid, nitric acid, and the solid nitrate of silver, are now daily used by gynaecologists in the treatment of uterine disease. In employing these agents to the interior of the uterus, I long ago observed that sometimes the occurrence of the next catamenial period was accelerated and the amount of the discharge increased as the result of the application of these agents, and this even in cases in which the treatment had been adopted for the cure of menorrhagia depending on an unhealthy condition of the intra-uterine surface, and in which I had from previous experience anticipated an opposite result. In carefully watching the cases subjected to this treatment, I observed that an increased flow generally occurred when a caustic was applied shortly before the expected appearance of the menstrual discharge. The reason why this was so is, I believe, now capable of explanation, for if a caustic be applied to the interior of the uterus shortly before the occurrence of a menstrual period, it is calculated to destroy at once the vitality of the lining membrane, which is already ripe for disintegration, and therefore accelerates that process, while it is easy to conceive that the stimulating application made to the inner surface of the uterus increases the determination of blood, which naturally exists towards it, at the close of the intra-menstrual period, and that thus the flow comes to be increased. Therefore, as a rule, I now never apply a caustic to the interior of the uterus in cases of menorrhagia, except immediately after or a few days subsequent to the termination of a catamenial period.

By selecting this time two advantages are gained:—Firstly, you apply the caustic directly to the true uterine wall, which, and not the ephemeral mucous membrane, is, in my opinion, most frequently the seat of disease;

and, secondly, you apply it at the time in which the utero-ovarian system is at its minimum degree of activity.

But I believe there is another important practical inference to be deduced from the knowledge we now have as to the nature of the menstrual discharge—namely this, that if the discharge be mainly due to the disintegration and casting off at definite periods of the membrane lining the uterine cavity, may not certain forms of amenorrhœa depend on some abnormal condition of that membrane, whereby the disintegration is imperfectly effected, or not effected at all, and should not such forms of uterine disease be treated by the application of agents calculated to hasten and bring about this disintegration? I believe the practice based on this inference will prove to be correct. Long before my attention was drawn to the theory of menstruation, as elucidated by the researches of Dr. Arthur Farre, Dr. Williams, and others, I had commenced the practice of applying a caustic to the interior of the uterus in certain cases of amenorrhœa. I was led to adopt this practice from the fact already referred to—namely, that I had observed, when a caustic was so applied shortly before the expected occurrence of a menstrual period, the flow was likely to be increased, and in several cases I obtained satisfactory results. The correctness of this practice, commenced as an experiment, founded on a clinical observation, is, I believe, confirmed by the results of Dr. Williams' observations, and I am of opinion that if suitable cases be selected—namely, those in which organic disease neither of the lungs nor of other organs exists, and which are free from any symptoms indicating the existence of inflammation of the uterus—the treatment I have pointed out will prove very useful. As yet my experience on this point has been but limited, and I am therefore unwilling to lay down very definite rules; but the results of my practice have been encouraging. The caustic I have generally used for the purpose has been carbolic acid.

The following case is an example of the effect of this method of treatment:—

Mrs. —, the wife of an army medical officer, came under my care on the 1st March last. She had been confined of her first child in the previous month of November. Her labour had been difficult, and she had been delivered with the forceps. Three days subsequent to delivery she was attacked with some form of pelvic inflammation, which terminated in the formation of an abscess, which discharged per vaginam. She made a good recovery; but, although she had not been able to nurse, she never menstruated since her confinement. Her general health was now good, but the non-appearance of menstruation caused anxiety. On a vaginal examination the uterus was found to be in its natural position, and to be normal in size and shape; nor was there any symptom present indicative of uterine or ovarian disease. I advised her to go to

the seaside, believing that in the absence of any actual disease menstruation would recur without any special treatment as her health became better. This opinion proved incorrect. In September, after a six months' residence in the country, a considerable portion of which time had been passed at the sea-side, no return of the menstrual discharge had occurred, and this even though she had become quite robust. Acting on the principle I have already spoken of, I now decided to try the effect of the intra-uterine application of a caustic, choosing carbolic acid for the purpose. The result was marked. On the third day after the application menstruation set in, and lasted for three days without pain. The next menstrual period occurred at the regular time, and the function is now perfectly re-established.

I need hardly add, speaking before a Society such as this, that the treatment I have been speaking of is applicable to a limited number of cases only.

There is yet a further view of the possible pathology of some forms of amenorrhœa opened up by the knowledge we now possess of the physiology of menstruation. If menstruation consist in an essential degree in the gradual development of an intra-uterine mucous membrane and its subsequent disintegration, may not amenorrhœa in some of its forms, and dysmenorrhœa possibly too, depend on the total or partial failure of the uterus to produce this membrane? My conviction is strong that such is the case, and here again the task is set before us of endeavouring to devise a scientific mode of treatment which will, by restoring a healthy tone to the uterus, favour the reproduction of this essential element of menstruation. To me it appears clear that the so-called "emmenagogues" are, in such cases, certain to fail, even if not productive of actual harm, and that we must direct our attention more and more to local treatment if we hope to avoid the imputation of being mere empirics—a charge unfortunately only too true when alleged with reference to many practitioners who undertake the treatment of uterine disease. The conclusion to which I am forced, alike by the result of clinical experience and logical inferences from the data supplied to us, is that both amenorrhœa and menorrhagia are comparatively rarely the result of constitutional causes.

Of course, everyone is aware that in phthisis, and in some other forms of organic diseases, amenorrhœa is a prominent symptom. To such cases I am not at present alluding, but to that very large class in which the departures from normal menstruation cannot be explained by the existence of such affections, and in which it is too commonly the custom to exhibit what are, in my opinion, improperly termed "emmenagogues." On the other hand, I see the danger which would occur were practitioners to treat cases of amenorrhœa indiscriminately by the application of caustics to the interior of the uterus. I warmly protest against such

an inference. The only hope of preventing the possibility of the occurrence of such grave errors rests with those engaged in clinical teaching. Let them be careful to point out that one line of treatment cannot be suitable to all classes of cases, and that great care must be exercised in the selection of suitable ones in which to carry out special treatment, whether that be by the exhibition of medicine or by local applications. That this care is exercised by the majority of obstetric teachers is, I know, the fact, and I look forward to a time when the lamentable errors in the treatment of uterine affections, which hitherto have been of but too frequent occurrence, will become rare.

In concluding the brief observations I have addressed to you to-night, I wish to point out that I have not attempted to lay down any definite rules for the treatment of the affections I have alluded to. My desire has been to draw attention to what I believe to be an important step in our knowledge of the physiology of menstruation, and the bearing which, to my mind, this may have on the treatment of uterine affections.

TRANSACTIONS OF THE CORK MEDICO-CHIRURGICAL SOCIETY.

President—DR. E. R. TOWNSEND, Jun.

Secretary—DR. RINGROSE ATKINS.

*Case of Idiopathic Pyæmia.** By DENIS D. DONOVAN, M.D., &c., Physician to the Cork Dispensary.

ON the 14th March, 1874, I got a red ticket to visit John Lee (who was said to be suffering from a sore knee), at the Kerry Pike. He was a strong young labourer, twenty-one years old, who never had a day's illness until about ten days previous, when at work he was seized with a pain in his right shin-bone. He did not particularly notice it at the time, and continued at his work for some days. Five days afterwards he got a shivering, and noticed a swelling in his right knee. This caused him intense pain—so much so that he had to abandon his work—and in a short time took to bed. He spent three sleepless nights, and had several attacks of shivering, the pain increasing and extending up and down the leg.

When I saw him he complained of severe pain of his right knee and shin, also of his ankle; his left shoulder and jaw, he said, felt stiff. On making an examination I found the right leg was much larger than the left, an erysipelatous blush extending from about the middle of the thigh to the knee, and over the lower two-thirds of the leg as far as the internal malleolus. The knee-joint was full of fluid, with a large deep abscess in the thigh extending upwards. The leg itself felt as a bag of fluid, and distinct fluctuation was detected over the internal malleolus. There was some redness at the back part of the left shoulder-joint, as also at the left temporo-maxillary articulation. His face was pale and pinched-looking and presenting the appearance of intense suffering. He had not slept for the past three nights with pain and shivering. Pulse was 120; tongue furred. Ordered linseed poultices and pulv. Doveri gr. x. at night.

March 16th.—The inflammation from the angle of the jaw had extended over the cheek, so as completely to close up the left eye, the jaw feeling so stiff that the tongue could not be protruded. Ordered—

R. Spts. am. art.	.	.	.	℥ss.
Tinct. cinchonæ comp.	.	.	.	℥ij.
Dct. cinchonæ	.	.	.	ad. ℥xij.
℥. ft. mist.				

Two tablespoonsful every four hours.

* Read Wednesday, March 10th, 1875.

Milk, beef-tea, with four glasses of port wine and tinct. opii. m. xxx. in a draught at night.

March 18th.—Spent a very bad night, complaining of pain and rigors. The shoulder-joint felt stiff and painful, and an abscess, with deep fluctuation, was detected in the supra-spinous fossa. The patient himself submitting, I now determined to cut down over the different abscesses and let out the matter, as also to tap the knee-joint with a trochar; but his mother stoutly refused to let a knife be put near her son, pulled off the poultices, and insisted that flour should be substituted, as it was the proper treatment for erysipelas. Of course I had to submit, and as the unfortunate patient was complaining dreadfully of pain and rigors, I ordered him—

R. Quiniae sulph.	.	.	gr. v.
Pulv. opii.	.	.	gr. ss.
m. ft. pulv.			

One to be taken three times a day.

To continue his nourishment and the draught at night.

March 21st.—Sleeps better; the abscess in the jaw has burst internally; complains of slight diarrhoea.

March 24th.—Tongue and throat feeling sore; not so well able to take his nourishment. Ordered—

R. Potass. chlor.	.	.	3iv.
Acid hydrochlor. dil.	.	.	3ij.
Glycerinæ	.	.	3ij.
Dct. cinchonæ	.	.	ad. 3xij.
m. ft. mist.			

To be used as a gargle and mixture occasionally.

Patient feeling pretty well, notwithstanding that the diarrhoea was continuing, which I first felt inclined to check, but noticing that since it began the different abscesses were feeling softer and more quaggy, as if the pus in them was being absorbed and passing off by the bowels. As long as his strength kept up, and that he was not refusing his nourishment, I determined not to interfere with this effort of nature.

March 29th.—Tongue red, dry, and cracked; sordes forming about the mouth; pulse 130; circumference of the right leg nearly three times as much as of the left, to which it presents a marked contrast; another deep abscess is forming about six inches above the internal condyle of the femur. The leg is covered with ecchymosed patches where previous abscesses had existed, from which the pus had been partially absorbed. The abscess at the shoulder is greatly increased, extending over the spine of the scapula to its inferior angle; the skin over this abscess is extremely tense, and the matter feels as if beneath very thin paper. Patient passes

restless nights, being little relieved by the opiates; has frequent rigors, with profuse perspiration.

March 31st.—Complains of tightness about the chest, with short cough. Ordered turpentine stupes to the chest, and—

R. Spts. am. art.	.	.	.	℥ss.
Tinct. senegæ	.	.	.	℥ss.
Syrup scillæ	.	.	.	℥ss.
Dct. senegæ	.	.	ad.	℥viij.
m. ft. mist.				

A tablespoonful to be taken every three hours.

To stop quinine and opium powders, and to have half-pint of wine, with brandy and egg mixture; continue milk and beef-tea.

April 2nd.—Patient looking much worse to-day; propped up in bed; respiration 54; pulse 140, weak and compressible. The abscess above the internal condyle is spreading up the thigh and down the leg, across the knee-joint, a nasty dark-looking blush accompanying it. The walls of the abscesses feel tense. The entire leg has a doughy pitting feel, giving to the fingers the sensation of pressing on putty or fine wet sand. Slight sickness of stomach; diarrhœa not so much; had frequent rigors during the night; the abscess over the scapula not broken, the matter of it burrowing into the axillæ; his tongue and throat improved; can take his nourishment better; patient looking terribly emaciated; the several abscesses covered with flour, and wrapped in flannel.

April 4th.—Patient half insensible, muttering to himself; tongue dry and trembling; respirations 60; pulse 154; abscess of shoulder burst, discharging a large quantity of pus.

Died on the morning of the 5th, after spending a fearful night of suffering. No *post mortem* allowed.

There are one or two points in connexion with this case that I would wish to draw the attention of the Society to, and *first* as to how the disease originated?

We all know that pyæmia is more or less a disease of hospitals, and more especially confined to their surgical wards, where there are congregated together a number of severe accidents, with extensive suppurating wounds; that it depends on the entrance of some morbid poison into the blood, and through the blood to the system generally; yet what this poison is, or how it enters into the blood, is to the present day a vexed question. Various theories have been promulgated to account for it. You will bear with me while I mention a few.

Arnot believed that the cause of pyæmia was inflammation of the veins, the consequent production of pus in their cavities, and the entrance of this into the circulation.

Whilst Virchow, on the other hand, maintains that the puriform fluid in the affected veins is not pus, but simply disintegrated clot; that the clot is formed in the veins independent of phlebitis, and that inflammation is not the cause, but the consequence, of the clot.

Dr. Burdon-Sanderson has found that in pyæmia, as produced in the lower animals, bacteriæ abound in all the inflammatory liquids, and also that these same organisms exist in the blood. And Dr. Bastian, on examining the pus from several suppurating wounds when the temperature of the patient was over 100°, discovered numbers of bacteriæ, but when the temperature was low, and the patient healthy, no such organisms could be detected.

Chemistry, on the other hand, has come forward, and isolated a principle termed "sepsin," or "septin," which is described as an alkaloid generated by the decomposition of albuminoid matter. This, it is asserted, is capable of producing pyæmia.

To which of these theories are we to apply the present case? The primary lesion appears to me to have been an acute attack of periostitis of the tibia, with extensive suppuration, followed by necrosis of a portion of the shaft, the formation of a thrombus in some of the adjacent veins, the disintegration of that clot, and the circulation of emboli through the system, which would fully account for the formation of the different metastatic abscesses.

Secondly, with respect to the treatment:—

1st. The plan of treatment clearly indicated in this case was, in the first place, the free evacuation of the pent-up matter by deep and early incisions. This, unfortunately, could not here be accomplished.

2nd. To allay pain and procure sleep, which was partially succeeded in by opium.

3rd. If possible to prevent rigors. I attempted this with large doses of quinine, giving five grains three times a day, with but little success. I am aware that larger doses have been tried with the same results, to the extent of half-drachm doses given every four hours, or when a rigor is expected, and if the stomach rejects it, it has been administered subcutaneously.

4th. To sustain the patient's strength with nourishing and easily assimilable diet—the free administration of stimulants is our sheet-anchor in cases of pyæmia, as in all low fevers and inflammations.

It struck me during the progress of this case that an eliminative plan of treatment might be fairly tried in such a disease, because I noticed that when the diarrhœa set in the abscesses became softer, and, as it were, partially emptied of their contents, the pus from them being absorbed and passing off through the bowels. I would ask the members of this Society if, from their experience, they would approve of giving purgatives, with diaphoretics, &c., to a young and strong patient

suffering from pyæmia, or whether they would consider such a plan of treatment worthy of a trial?

A rather scientific plan of treatment has been lately introduced by Professor Polli, of Milan, who found by experiment that sulphurous acid prevented the fermentation of wines, and assuming that pyæmia was caused by a certain septic substance entering the blood, and producing in it a catalytic action, he recommended that large doses of the alkaline sulphites be administered, with the view of checking this process, the sulphites possessing the same anti-fermentative properties as the sulphurous acid, without injury to the system, as they become absorbed and eliminated without undergoing any chemical change.

Finally, I may ask the question, would this patient have recovered if deep and early incisions had been made, so as freely to eliminate pus? Though knowing that the mortality from pyæmia is exceedingly high, averaging about 90 per cent., I am inclined to believe that he would, considering his youthful and vigorous constitution, his being able (up to the last) to take and retain large quantities of nourishment, having no sickness of stomach, being exposed to fair hygienic surroundings, with a current of pure air, and, lastly, the length of time he struggled on with such immense quantities of puriform matter circulating in his system, together with the origin of the disease, his having no external wound, undergone no shock of an operation, or met with any injury.

CLINICAL RECORDS.

Notes from the Wards of the Cork Hospitals. Communicated by MR. MARTIN HOWARD.

ST. PATRICK'S HOSPITAL.—*Case of Epithelioma occurring in the very unusual situation of the Upper Lip.* Under the care of STEPHEN O'SULLIVAN, M.D., M.Ch., Surgeon to St. Patrick's Hospital, &c.

Kate M., aged fifty-five, residing at Killagh, county Cork, was admitted to St. Patrick's Hospital for Incurables on the 20th July, 1875. She is the wife of a small farmer, and has had no children. About seven years ago she observed a small wart growing on the left side of her upper lip. This was partially removed by caustic, which was applied by a physician whom she consulted. About twelve months ago the superficial part of the lip ulcerated, and the deeper parts became hard and tender. The induration increased, and extended slowly up to the date of her admission to hospital. On her admission there were observed considerable ulceration of the mucous surface of the upper lip, especially on the left and inner side, and a tumour extending from the margin of the lip to within a quarter of an inch of the ala of the left nostril, and laterally, on the left side, to within half an inch, and on the right side to within three-fourths of an inch of the commissures of the mouth. Had slight bleeding from the tumour three weeks before her admission. She suffered little or no pain. No glandular enlargement. Operation having been decided on, the disease was excised on the 24th July, in the following manner:—

A transverse incision, about an inch and a half in length, was made through the upper lip, immediately under the alæ of the nose; two oblique incisions, commencing at about three-eighths of an inch from the extremities of the transverse incision, were made, on either side of the tumour, downwards to the surface of the upper lip, thus removing about two-thirds of the upper lip. The oblique incisions were brought together by two twisted sutures, and the remaining surfaces retained in their position by strips of adhesive plaster. One of the pins was removed on the 26th, and the second pin was taken away on the 27th July. Complete union of all the parts had taken place on the 12th August, when the woman was discharged, cured, from hospital.

The microscopic appearances presented by portions of the morbid growth were those of *epithelioma*, showing the "concentric globes, with the epithelial cells closely adhering together."—(Dr. R. Atkins.)

The upper lip is so seldom attacked by *epithelioma* that very few surgeons have an opportunity of observing the disease, nor is it looked for in this situation. Thiersch "attributes to the upper lip a sort of immunity against the disease." Hebra describes two cases which he treated and cured, and Sir Astley Cooper had only one case in his extensive practice. Erichsen considers that "*epithelioma* almost invariably affects the lower lip," and Fergusson says "that it is very rarely seen in the upper lip."*

NORTH INFIRMARY.—*Case of Oblique Inguinal Hernia, followed by Peritonitis and Typhoid Fever.* Under the care of STEPHEN O'SULLIVAN, M.D., M.Ch., Assistant Surgeon to the Infirmary.

Patrick W., aged fourteen, farm labourer, was admitted into the North Infirmary on Thursday, 10th June, 1875, presenting well marked symptoms of oblique inguinal hernia, which he stated was attributable to violent muscular exercise in the discharge of his duties. That peculiar expression of countenance, which once seen can never be forgotten, was particularly noticeable, and attracted general observation. Taxis failed to reduce the hernia, even when tried on putting the patient into a warm bath. The patient was then put under chloroform, and the reduction was effected.

Next morning the patient was reported to have passed a very restless night, and on examination symptoms of acute peritonitis showed themselves. Pills, containing two grains of grey powder and half a grain of opium, were ordered every four hours, and continued till salivation was excited. Eight leeches were scattered over the abdomen, followed by linseed-meal poultices.^b The symptoms gradually abated in severity, and diarrhoea setting in on the 14th, opium, in the form of pills and enemata, was administered. Wine was also ordered. On the 16th all inflammatory action had subsided, the diarrhoea was checked, and the patient considered convalescent. On the 18th the patient was reported to have spent another restless night, diarrhoea having returned about 1 a.m. The countenance had assumed a somewhat purplish hue and a rather anxious expression; there was diffuse abdominal tenderness, especially in the iliac regions, with rapid pulse and great prostration. The evacuations were slimy and yellow-coloured; the temperature nearly 100°. Chalk mixture, with tr. catechu and opium, was prescribed, grain doses of opium being also given every four hours. The diet was milk and chicken-broth. On the 22nd the evacuations became ochre-coloured, and gurgling could occasionally be felt in the

* Since the taking of the notes of the above case, a male, aged sixty-five, was received into the North Infirmary, under Dr. O'Sullivan's care, also suffering from *epithelioma* of the upper lip. The disease was excised in the manner above described, and the case turned out successfully.

^b Next day the patient was profusely salivated.

iliac regions. The temperature ranged from 102° in the morning to 103° in the evening, and the average rate of the pulse was 120. The tongue was white and furred, the skin hot and dry, the eyes suffused, and great thirst existed. The urine was scanty, high-coloured, and deficient in chlorides. Decoction of logwood was substituted for chalk mixture, opium enemata were ordered at night, and nutriment and stimulants were increased. Rose-coloured lenticular spots appeared on the arms about the 30th, when the gurgling became quite distinct. The temperature ranged from 103° in the morning to 104° in the evening. Diaphoretic powders were prescribed. On the 1st of July the spots became general, and a low, muttering delirium set in. Subsultus tendinum, deafness, and tinnitus aurium followed. The pulse was dicrotous in character, and the temperature rose in the evening to 105° . Tympanites was very great also. On the night of the 6th the delirium grew loud and constant; hæmorrhage from the bowels took place on the 7th, and the patient shortly afterwards expired.

On a *post mortem* examination being made, the Peyerian glands were found to be hardened, indurated, and sloughing. In some parts, nearest the cæcum, ulceration existed, and the coats of the intestines were perforated, the openings being generally small. The intestines themselves contained a large quantity of blood, the spleen was enlarged and flabby. The lungs were congested at the base; the liver was enlarged, and the heart anæmic. No trace of the hernia could be found, and the peritoneum was only partially inflamed, constituting what is called circumscribed peritonitis. The solitary and mesenteric glands were enlarged and ulcerated.

This case was certainly a very peculiar one, when we consider the complications that followed the primary disease. Much trouble was taken to ascertain if the patient had had any symptoms of typhoid fever previous to his admission to hospital, but the closest investigation did not lead to any satisfactory result. The peritonitis—granting that it was peritonitis—can, of course, be readily accounted for, and the only remaining question any way difficult of solution is the causation of the typhoid fever. Was the fever contracted in the infirmary, or was it contracted in the locality whence he came previous to his admission? The possibility of his having caught the disease in the hospital is negatived by the fact that for a considerable time past there was no case of fever in the house, a circumstance which goes far to prove the observation of Dr. Austin Flint, that “typhoid fever is very rarely, if ever, communicated by means of emanations from the bodies of patients affected with the disease.” It must, accordingly, be presumed that the disease had been contracted in the place to which he belonged, and this conclusion may be the more readily arrived at as there were several cases of fever reported from that district (Blarney) about the time of his admission to the infirmary.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
November 6th, 1875.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Small-pox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin, -	314,666	637	600	—	15	10	6	21	12	40	24·8
Belfast, -	182,082	443	326	1	13	16	4	—	12	17	23·3
Cork, -	91,965	192	173	—	—	19	1	4	9	8	24·5
Limerick, -	44,209	55	69	—	—	—	—	3	1	3	20·3
Derry, -	30,884	46	53	—	2	13	—	3	1	3	24·4
Waterford, -	30,626	40	48	—	—	—	—	—	3	1	20·3
Galway, -	19,692	16	26	—	—	—	—	—	1	1	17·2
Sligo, -	17,285	14	14	—	—	—	—	—	1	1	13·8

Remarks.

The returns from Sligo are for the last three weeks of the period only. The death-rate was rather high in Dublin, Cork, and Derry; moderate in Belfast, Limerick, and Waterford; and low in Galway and Sligo. In London it was 23·0 per 1,000 annually, in Glasgow 21·5, and in Edinburgh 20·5. Of zymotic affections, measles was fatal in Dublin and Belfast; scarlatina very fatal in Derry and Cork, fatal in Belfast and Dublin; whooping-cough fatal in Derry and Dublin; and diarrhoea fatal in Dublin and Belfast (during the earlier part of the four weeks under discussion). Zymotic diseases generally caused 128 deaths in Dublin, of which 106 took place within the municipal boundary. The increasing fatality of respiratory affections with the advancing season is well seen in the case of Dublin, where the deaths numbered 13, 26, 28, and 36 respectively.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.,
for Month of October, 1875.*

Mean Height of Barometer, - - -	29·730 Inches.
Maximal Height of Barometer (3 p.m. on 6th), -	30·401 „
Minimal Height of Barometer (4 p.m. on 11th), -	29·232 „
Mean Dry-bulb Temperature, - - -	49·4°
Mean Wet-bulb Temperature, - - -	47·6°
Mean Dew-point Temperature, - - -	45·7°
Mean Humidity, - - -	87·0 per cent.
Highest Temperature in Shade, - - -	66·7°
Lowest Temperature in Shade, - - -	34·9°
Lowest Temperature on Grass (Radiation), -	33·5°
Mean Amount of Cloud, - - -	70 per cent.
Rainfall (on 26 days), - - -	7·049 Inches.
General Direction of Wind, - - -	S.E. and W.

Remarks.

October, 1875, will long be remembered for its excessive and persistent rainfall (7·049 inches on 26 days!) During the past 11 years the heaviest monthly rainfalls in Dublin have occurred in October, 1864 (5·255 inches); March, 1867 (4·972); August, 1868 (4·745); December, 1868 (4·749); January, 1869 (4·258); May, 1869 (5·414); October, 1870 (5·194); July, 1871 (4·391); September, 1871 (4·048); August, 1872 (4·302); December, 1872 (4·932); August, 1874 (4·946); and October, 1875 (7·049 inches). The heaviest rainfall in 24 hours during the same period was 2·482 inches, on August 13, 1874. From the 18th to the 31st of October, inclusive, 5·897 inches of rain fell at 40, Fitzwilliam-square, West, Dublin. The cause of this remarkable downpour was the existence of an almost stationary area of *high* barometrical pressure, with severe cold, over Scandinavia and Russia. This high pressure opposed the passage eastwards, across the British Islands, of cyclonic systems, while the cold precipitated the moisture abounding in these areas of depression. From the 9th the barometer was uniformly high in the N.E. of Sweden, and the high pressure travelled southward down the Baltic coasts. Intense cold for the time of year set in near the centre of highest pressure on the 18th, the 8 a.m. temperatures at Haparanda (Gulf of Bothnia) being, from the 18th to the 29th, 28°, 24°, 19°, 22°, 22°, 15°, 21°, 28°, 27°, 19°, 22°.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

TO REMOVE NITRATE OF SILVER STAINS.

PLACE a few grains of metallic iodine in a saucer, and pour upon it a few drops of liquor ammonia. Paint the spots with the mixture, and they will quickly disappear, no matter how extensive or how old they may be. Care must be taken to destroy the mixture after use, as the iodide of nitrogen, of which it is composed, is an extremely explosive substance when dry. It is stated that this method is much superior to the washings with the solution of iodide and cyanide of potassium. It acts more promptly, and has none of the inconveniences of the other method.—*L'Abeille Médicale*.

IRRIGATION IN NASAL DISEASES.

At a meeting of the Société de Thérapeutique, on July 13th, M. Créquy brought forward a case of ozæna, in which injections of a tablespoonful of the following solution :—chloral, ʒss., water, ʒviij., in a wine-glass of water, had effected a speedy cure, after all other means had failed. The mode in which these injections were carried out is important, and is not, perhaps, so universally known in the profession as its general usefulness in cases of nasal affections would seem to warrant. One end of an india-rubber tube is placed in the glass* containing the solution to be injected, and the other end of the tube is introduced into the patient's nostril. The glass is then held up, and by this means a syphon is formed, through which the injection enters the nose by one nostril and flows out of it through the other, without the fluid entering the throat. *Apropos* of M. Créquy's communication, Dr. Constantin Paul gives (*Bull. Gén. de Thérap.*, 30 Août), an interesting note upon the subject of nasal or nasopharyngeal irrigation, and its application to the treatment of acute and chronic affections of the nasal fossa. It was E. H. Weber, of Leipzig who, in 1847, in experimenting on the influence of temperature upon the functions of nerves, discovered that water introduced into the nostril of a person in the recumbent position, filled up both the cavities, and came out again of the opposite nostril; the soft palate effectually closing the pharynx.* Dr. Paul gives the history of the application of this discovery to therapeutics—first by Weber's brother, Thomas, of Halle—and then proceeds to certain details connected with the mode of irrigation. He recommends that it should be practised with the patient in the upright

* Müllers' Archiv., 1847, p. 351.

position, and the head bent forward, the nostrils occupying the lowest portion of the nasal form. The best apparatus is the original one of H. Weber—of which he gives a figure. It consists of a caoutchouc tube, a yard and a half in length, the nasal extremity having an "ampulla" of horn or glass, which fits into the nostril; at the other end is a U-shaped tube of some solid material for convenience of insertion into the solution. A special apparatus is not, however, necessary, as an ordinary bone enema pipe, around which linen may be wrapped to give it sufficient volume, so as to fill up the nostril, can be easily adapted to the tube of an irrigator. In such case M. Paul advises that the tap of the irrigator should be at "half cock." The affections in which he has especially employed these irrigators are:—*ozæna*, lupus of the nose, chronic rhinitis, nasal eczema, and acute coryza. He has successfully used solution of hyposulphite of soda (5 to 100), and a 1 per cent. solution of chloral. Natural or artificial sulphurous waters are useful in chronic coryza, and other mineral waters, or astringent solutions, &c., may be applied in the same manner. In ordinary acute coryza, and in chronic catarrh of the nasal canal, Dr. Paul has obtained most prompt cures by irrigations of tepid water.

FOR THE RELIEF OF THE THROAT IN PHTHISIS.

It not unfrequently happens that the chief thing of which the patient complains is the throat, and when it is examined evidences of pharyngitis and more or less of follicular inflammation are quite likely to be seen. For the relief of this condition, salt water with oil of black pepper, used in the form of spray, is recommended. The solution of salt should perhaps be no stronger than that made by adding a teaspoonful of common table-salt to a pint of water, and oil of pepper added in the proportion of one drop to the ounce.—*N. Y. Med. Record.*

TREATMENT OF PHAGEDENIC GANGRENOUS VENEREAL SORES.

DR. SIMMONS, chief surgeon of the Ken Hospital, Tokohama, Japan, says (*N. Y. Med. Record*, September 11), that the last four cases of the above description which have come under his care were almost entirely treated by a process which was productive of such satisfactory results as to warrant him in earnestly recommending its trial. It consists in the continuous immersion of the diseased part in hot or warm water. One case is referred to in which both labia, minora and majora, the fourchette, clitoris, and portions of the urethra had disappeared, and all the region occupied by the external organs of generation had been converted into an immense irregular cavity, discharging an unhealthy, sanious, and very foetid pus. The patient was also suffering much pain, especially if the parts became in the least dry. After being in a sitz bath for thirty-six hours, a change for the better commenced, and it was not found necessary to

keep the patient so continuously in the bath, but only on alternate hours. In the interval, iodoform was sprinkled freely over the part. It is Dr. Simmons' opinion that the destructive agency is to be found in the peculiar or specific character of the discharge, and that the water simply removes or dilutes it, so as to destroy its action, the same as it would with a caustic. He now adopts this plan in the treatment of all soft chancres that are troublesome. In the male the penis may be immersed in a tumbler or cup of water.

PROGRESSIVE PERNICIOUS ANÆMIA.

IN the October number of the *American Journal of the Medical Sciences* there is an able article by Dr. William Pepper on this peculiar form of anæmia, which, as the author says, has recently been redescribed, under the above name, as though it were a new affection. Without giving a complete historical memoir upon the subject, he shows that, under the name of idiopathic anæmia, the disease was long since recognised by Addison; and that Bennett and Virchow, Hodgkin, Wilks, Trousseau, Cohnheim and Wunderlich, Griesinger, Wood and Ponfick have described varieties of progressive fatal anæmia, connected more or less with leukæmia or pseudo-leukæmia, but which differ in some points from the essential anæmia described by Addison. Dr. Pepper makes a brief allusion to several recently recorded cases, which show the comparative frequency of this grave affection, and gives very fully the history of three cases he has himself observed, with the results of the *post mortem* examination in two of them. The particular characteristics of the affection may be summed up as follows:—A gradually and inevitably fatal progress, absence of emaciation, extreme diminution of red globules without increase in number of white corpuscles, absence of lesions of spleen or lymphatic glands, presence of intense anæmic murmurs, passive dropsy and other signs of alteration of the blood and failure of heart-power, and, finally, fatty degeneration of the heart and of various organs, as the only organic lesion of the solids after death. Dr. Pepper considers in detail the symptoms and pathology of the affection, and concludes his article by stating the following conclusions:—

1. Progressive pernicious anæmia is identical with the idiopathic anæmia of Addison, and is in no sense a new disease.
2. It is in reality the medullary form of so-called pseudo-leukæmia.
3. As the primary and essential lesion in this and the analogous conditions (leukæmia and pseudo-leukæmia) appears to be an affection of the chief blood-making tissues—spleen, lymphatic glands, marrow of the bones—causing defective elaboration of the blood, it seems proper to select some name that will indicate this fact, as *anæmatisis*.
4. The changes in the blood consist of great reduction in its mass, with extreme diminution in the proportion of red globules, without

increase in the white corpuscles. There are probably also changes in the vital properties both of the red and white corpuscles.

5. The other lesions, chiefly fatty degeneration of the heart and other organs, passive effusions and hæmorrhages, are secondary, and depend upon the blood-changes.

6. The symptoms are explicable, in great part, by the state of the blood and the condition of the heart.

7. The disease, when once fully established, appears to be invariably fatal.

8. The remedies which afford most prospect of relief are cod-liver oil, arsenic, and phosphorus.

9. Transfusion is only capable of doing temporary good.

10. The operation is not free from grave danger, owing to the feebleness of the heart and the small amount of blood in the vessels; and, in order to be safely employed, the amount of blood injected must be very small (f3iij), it must be introduced very slowly, and the operation must be repeated at suitable intervals. It adds to the safety of the operation to inject the blood into a small artery instead of a vein.

ERGOT OF RYE AS AN ANTIPYRETIC.

M. HAYEM has been making a trial of ergot of rye in cases of enteric fever, with the object of lowering the temperature. The results he has obtained have been very satisfactory, and its employment in this disease seems to him preferable to that of sulphate of quinine or of digitalis. Under the influence of ergot there is a much more rapid defervescence; and at the period of the acme, instead of there being a rise in the temperature chart, a plateau is obtained. In some cases in which the ergot was only given during the day, the evening temperature was not so high as the morning. The dose varied from thirty to fifty grains in the twenty-four hours.—*Rev. de Thérap.*, Oct. 1.

"THE PERFORATING ULCER" OF THE FOOT.

H. FISCHER has (*Arch. f. Klin. Chir.* XVIII., 301) contributed an exhaustive memoir upon this obscure and much controverted affection. He enumerates eleven different theories which have been variously held as to its pathological nature:—1. A simple ulcer in an unusual situation (Sedillot). 2. Suppuration of the bursæ of the toes (Gosselin). 3. An ulcer depending upon gravity and pressure (Leplat). 4. An ulcerous affection of a cyst developed from an obliterated sudoriparous gland (Adelmann). 5. Ulceration consecutive to primary bone disease (Maurel). 6. A variety of canceroid (Volkmann). 7. The result of syphilis (Esmarch). 8. Of uræmia or glycosuria (Marquez). 9. Psoriasis plantaris (Vésignié). 10. An affection of the arteries, viz., (a) atheroma (Dolbeau); (b) Embolism (Lucano). 11. Neuro-paralytic ulceration (Duplay). Fischer

inclines to the last of these views; the affection, according to him, having an affinity with Elephantiasis Anæsthetica, from which it differs, however, in the greater localisation of the morbid action, in commencing not in a bullous exanthem, but in a callosity, and in the circumstance of its not being hereditary. He gives seven cases, all of which, having occurred in the course of affections of the nervous system, he looks upon as strongly confirmatory of this view, as the following résumé will show:—

- (1). Myxoma of spinal cord. (2). Old hemiplegia. (3). Wound of sciatic nerve. (4). Atrophy of the leg, after femoral luxation. (5). Ununited fracture, with paralysis. (6). Gun-shot wound of sciatic nerve. (7). Neuralgia of the leg.—*Rev. d. Sc. Med.*, t. VI., p. 264.

T. E. L.

INSUFFLATION IN INTESTINAL OBSTRUCTION.

DR. BRUN, in a communication to the *Journal de Médecine*, describes a case of intestinal obstruction, due to the ingestion of large quantities of fruit, which was successfully relieved by means of J. Wood's method of insufflation of air. The difficulty had lasted for four days, and had resisted all the ordinary methods of treatment. Moreover, the procedure recommended by Taliaferro of injecting into the bowels bicarbonate of soda and citric acid separately, for the purpose of liberating gas in the intestines and distending the canal, had been tried ineffectually. The patient was evidently sinking; the pulse was very feeble, and there was stercoraceous vomiting. An œsophageal sound was introduced into the rectum, and to the external extremity the nozzle of an ordinary bellows was attached. Air was then injected till the abdomen had increased markedly in volume. The first attempt, however, was unsuccessful. It was repeated, and the insufflation continued until considerable abdominal tension was produced, and respiration was rendered difficult. In the course of an hour dejections began and the patient recovered.—*N. Y. Med. Rec.*

METHOD OF INSTANTANEOUSLY ARRESTING PALPITATIONS OF THE HEART.

DR. J. LARDIER describes (*L'Union Médicale*, August 21st) a method by which he asserts that palpitations of the heart, not due to any material lesion of that organ or of the nervous centres, may be instantaneously arrested. He discovered this means accidentally, when troubled himself with palpitations. Since then he has directed many of his patients suffering from this trouble to bend their body, the head down, and the arms hanging so as to momentarily cause congestion of the upper part of the body. In all cases of nervous or anæmic palpitations the heart quickly resumed its normal action. He adds that if, while in the above-described position, respiration is arrested for a few seconds only, the relief afforded is still more speedy.—*American Journal of Medical Sciences.*

VOMITING IN PHTHISIS.

ONE explanation of this symptom, when it occurs in the first stage of the disease, is that it may be produced by pressure of the enlarged bronchial glands upon the *par vagum*. Dry cups between the scapulæ, it is said, will arrest the vomiting in this stage very quickly. In the advanced stages of the disease the enlargement of the bronchial glands disappears, and the vomiting depends upon another cause. For example, the patient commences to cough in the morning to remove collections of mucus and pus which have accumulated during the night, and as the muco-purulent or purulent material comes into the mouth, its taste and offensive odour produce nausea and vomiting. Absorption of septic material also enters as a factor when cavities are present. To relieve the symptom under these circumstances carbolic acid is recommended. These theories must be taken for only what they are worth. The therapeutics have some value.—*N. Y. Med. Record*.

SPINAL ARTHROPATHIES.

IN the very excellent memoir which, in conjunction with Drs. Morehouse and Keen, Dr. S. Weir Mitchell published in the year 1864, on the subject of injuries of the nerves, allusion was made to the occurrence of pathological changes—tumefactions, &c.—of the joints in cases of wounds of the nervous system; and, in noticing the likeness these complications present to the phenomena of sub-acute rheumatism, occasion was taken to mention the fact that many years ago his father—Dr. J. K. Mitchell (*Am. Jour. of the Med. Sci.*, Vol. VIII., p. 55)—had, on the faith of observations of this kind, been induced to regard rheumatism as having its pathological site not in the sanguineous system (as prevailing opinion contends), but in the nervous system. In a paper published in the April number of the *American Journal of the Medical Sciences*, Dr. Weir Mitchell recurs to the subject, and gives a series of illustrative cases, which, in his opinion, establish the point that swellings and other affections of the joints must henceforth be ranked among the possible complications of spinal and cerebral injuries and diseases. The most remarkable, perhaps, of these cases is one in which the arthropathy preceded all other symptoms or indications of circumscribed myelitis. Dr. Mitchell contends for the priority of his father (Prof. John K. Mitchell, 1831–83) in recording and recognising the significance of cases of this description, a priority usually conceded to Sir W. Gull. The subject is one opening up many interesting and important pathological problems, and well meriting further investigation and observation.

T. E. L.

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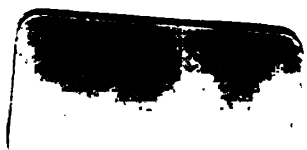
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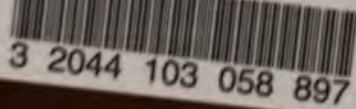
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